THE LANCET.

A Journal of British and Foreign Medicine, Surgery, Obstetrics, Physiology, Chemistry, Pharmacology, Public Health, and News.

TELEGRAPHIC ADDRESS—LANCET, LONDON TELEPHONE NUMBER—5356 GERRARD

No. XIX. OF VOL. II., 1911.
No. 4601. Vol. CLXXXI. LONDON, SATURDAY, NOVEMBER 4, 1911. Pp. 160—Price 6d.

ROYAL SOCIETY OF MEDICINE.

Temporary Address, during building of new house, 15, CAVENDISH SQUARE, W.

DIARY of MEETINGS on page 1312.

Recently Published. Royal 8vo. Pp. xxviii. + 1266. With 207 Illustrations, Plates, and Diagrams. Price 30s. net.

ACCIDENTS IN THEIR MEDICO-LEGAL ASPECTS.

THE RECOGNISED TEXT-BOOK ON THE SUBJECT.

Written by thirty-six leading medical and surgical authorities and edited by

DOUGLAS KNOCKER, Barrister-at-Law.

London: Baillière, Tindall & Cox, 8, Henrietta-street, Covent Garden.

J. & A. CHURCHILL'S NEW BOOKS.

TAYLOR'S PRACTICE OF MEDICINE. 9th Ed. 75 Figs. 18s. net.
SEQUEIRA'S SKIN DISEASES. 44 Plates. 179 Figs. 25s. net.
HEWLETT'S BACTERIOLOGY. 4th Ed. 96 Figs. 10s. 6d. net.
EDEN'S MANUAL OF MIDWIFERY. 3rd Ed. 296 Figs. 15s. net.
CORBIN & STEWART'S PHYSICS AND CHEMISTRY FOR THE CONJOINT BOARD. 4th Ed. 183 Figs. 7s. 6d. net.
CLOWES' QUANTITATIVE ANALYSIS. 9th Ed. 133 Figs. 10s. 6d. net.
ALLEN'S ANALYSIS. VOL. V. 4th Ed. By Experts. 21s. net.
CONTENTS.—Tannins; Leather; Dyes and Colouring Matters (Classes 1 to 5)—Diphenylmethane and Triphenylmethane Colouring Matters, &c.—Colouring Matters of Natural Origin—Analysis of Colouring Matters—Inks, Carbon Papers, Typewriter Ribbons, &c.—Colouring Matters in Food.
London: 7, Great Marlborough Street.

By EDMUND CAUTLEY, M.D., F.R.C.P.,
Senior Physician, Belgrave Hospital for Children, &c.

THE DISEASES OF CHILDREN.

1042 pages. Price 27s. 6d. net.

Shaw & Sons, Fetter-lane, E.C.

ST. BARTHOLOMEW'S HOSPITAL JOURNAL.—"A remarkable work."
LANCET.—"The best English text-book on the subject."
HOSPITAL.—"The premier book on children's diseases published in this country."
BRITISH JOURNAL OF CHILDREN'S DISEASES.—"We prophesy a brilliant future for this book, for there is no other in the English language so complete."

THE FEEDING OF INFANTS.

Second Edition. Crown 8vo. Price 7s. 6d.

J. & A. Churchill, 7, Great Marlborough-street, W.

LANCET.—"We do not think the subject could be more satisfactorily treated."

Illustrated by 93 figures and 58 cases. Pp. 301. 10s. net.

SURGERY of PARALYSES. By A. H. TUBBY, M.S. Lond., F.R.C.S. Eng., and ROBERT JONES, F.R.C.S.E.

"Can confidently recommend it as a practical summary of the most modern views."—EDINBURGH MEDICAL JOURNAL.
"No one interested in the treatment of paralysis can afford to leave it unread."—BIRMINGHAM MEDICAL REVIEW.
"Indicates original and successful methods of treatment."—AMERICAN JOURNAL OF ORTHOPÆDIC SURGERY.
London: Macmillan & Co., Ltd. New York: The Macmillan Co.

SECOND EDITION, with Illustrations, royal 8vo, 10s. 6d.

TREATMENT of LATERAL CURVATURE of the SPINE. By BERNARD ROTH, F.R.C.S.

"In speaking of the first edition we expressed the hope that this book would do something to check the unscientific and often disastrous treatment of lateral curvature of the spine by spinal supports and prolonged rest, and this new edition is even better calculated to show the good results which may be obtained in lateral curvature by posture and exercise."—THE LANCET.
"There can be no doubt that good work has been done by the author by his strong advocacy of the more rational method of treating lateral curvature of the spine by exercises."—BRITISH MEDICAL JOURNAL.
London H. K. Lewis, 136, Gower-street, W.C.

JUST PUBLISHED. Crown 8vo. 4s. 6d. net (inland postage 4d.).

DENTAL DISEASE in its RELATION to GENERAL MEDICINE.

By J. F. COLYER, L.R.C.P., M.R.C.S., L.D.S.,
Dental Surgeon to Charing Cross Hospital and the Royal Dental Hospital;
Assisted by STANLEY COLYER, M.D.
Longmans, Green & Co., 39, Paternoster-row, London, E.C.

Demy 8vo. Cloth. Price 3s. 6d. net; by post, 3s. 10d.

BIOGRAPHICAL REMINISCENCES of SIR SAMUEL WILKS, Bart., M.D., LL.D., F.R.S.

London: Adlard & Son, 23, Bartholomew-close, E.C.

Second Edition, with 120 Illustrations. Price 6s. net.

HANDBOOK of INTESTINAL SURGERY.

By L. A. BIDWELL, F.R.C.S.Eng., Surgeon, West London Hospital; Lecturer on Intestinal Surgery and Dean, Post-Graduate College.
London: Baillière, Tindall & Cox, 8, Henrietta-street, Covent Garden.

JUST READY—ANOTHER VOLUME OF COLLECTED PAPERS BY THE STAFF OF ST. MARY'S HOSPITAL.

MAYO CLINIC.

CONTRIBUTIONS TO 1910 LITERATURE.

See Saunders' Advertisement on Page 3.

Just Published. With a Coloured Plate. Price 5s. net.

RECENT ADVANCES in HÆMATOLOGY.

By WALTER K. HUNTER, M.D., D.Sc.
London: H. Kimpton, 263, High Holborn, W.C.

DISEASES OF THE STOMACH.

By W. SOLTAU FENWICK, M.D.

CANCER AND TUMOURS. Royal 8vo. 10s. 6d.
ULCER AND ITS CONSEQUENCES. Royal 8vo. 10s. 6d.
London: J. & A. Churchill, 7, Great Marlborough-street, W.

DISORDERS OF DIGESTION IN CHILDHOOD. Demy 8vo, 10s. 6d.
DYSPEPSIA OF PHTHISIS. Demy 8vo. 6s.
London: H. K. Lewis, 136, Gower-street, W.C.

By ERNEST CLARKE, M.D., B.S., F.R.C.S. Eng.,
Surgeon to the Central London Ophthalmic Hospital; Consulting Ophthalmic Surgeon to the Miller General Hospital.

ERRORS OF ACCOMMODATION AND REFRACTION OF THE EYE.

Third Edition. Pp. x. + 228. With 86 Illustrations and Coloured Plates. Price 5s. net.

"This volume is the very best of the class that goes into everything with care and thoroughness. ..... The book merits the highest commendation."—CANADA LANCET.
London: Baillière, Tindall & Cox, 8, Henrietta-street, Covent Garden.

A PRACTICAL HANDBOOK of the DISEASES OF THE EAR.

For Senior Students and Practitioners.
By WILLIAM MILLIGAN, M.D.,
Aurist and Laryngologist to the Royal Infirmary, Manchester; Surgeon to the Manchester Ear Hospital; Lecturer upon Diseases of the Ear, the Victoria University of Manchester;
and WYATT WINGRAVE, M.D.,
Pathologist (lately Physician) to the Central Throat and Ear Hospital, London, and to the Polyclinic, London.
With Illustrations. 8vo. 15s. net.
Macmillan & Co., Ltd., London.

LECTURES on HYSTERIA. Now Ready.

By THOMAS D. SAVILL, M.D.Lond.

"The volume contains no mere re-statement of the views of foreign neurologists, but is in itself a definite contribution to the study of *la grande nevrose*. ..... Dr. Savill is to be congratulated on having produced so original a book."—THE LANCET.
LECTURES ON NEURASTHENIA. 4th Edition.
"The standard English book on the subject, written by one who has made a most thorough investigation into its various relationships."—MED. TIMES & GAZETTE.
"Should be in the hands of every practitioner."—TREATMENT.
Glaisher, 57, Wigmore-street, W. 7s. 6d. net; 7s. 10d. by post.

By Special Royal Warrants

To H.M. King George V. To H.M. Queen Alexandra.

The Non-toxic **Cyllin** Bactericide.

(Medical)

Has a guaranteed Rideal-Walker Co-efficient of 20 to 22. It is therefore equal to Perchloride of Mercury as a bactericide.

(Vide "The Medical Press," Feb. 14, 1906.)

N.B.—It has been found necessary to substitute the term "Rideal-Walker Co-efficient" for that originally introduced by the authors, viz., "Carbolic Acid Co-efficient," owing to the abuse of the latter on the part of unscrupulous manufacturers and vendors.—*Vide British Medical Journal*, April 6th, 1907.

Preparations of Cyllin:—

Cyllin Capsules (palatinoids)—Recommended for Gastric or Intestinal Antisepsis.

Cyllin Syrup—For use where indicated in Infantile Diarrhœa.

Cyllin Inhalant—For use with Cyllin Inhalator in suppurative conditions of the bronchial passages, &c.

Lano-Cyllin—For chapped hands, abrasions, insect bites, &c.

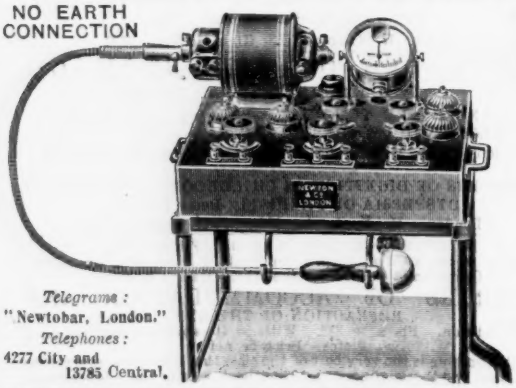
Cyllin Pastilles—Antiseptic Throat Lozenges; invaluable for purposes of mouth hygiene.

Cyllin Dusting Powder, Soaps, Lint, Wool, Gauze, &c.

See Pamphlet entitled "Standard Chemical Disinfectants." Copies, together with working Samples, sent gratis and postage paid on applying to

Jeyes' Sanitary Compounds Co., Ltd., 64, Cannon St., London, E.C.

NO EARTH CONNECTION



Telegrams: "Newtobar, London."
Telephones: 4277 City and 13785 Central.

IONIC MEDICATION

is ever growing in favour as a Therapeutic Agent, and our

UNIVERSAL APPARATUS

is especially suitable for these applications, in addition to providing currents for: **Galvanic, Sinusoidal or Combined Treatment, Surgical Lamps, Cautery, Electrolysis, Vibro-massage, &c.**

Also **COMPLETE BATTERY OUTFITS.**

Cases containing entire Sets of ELECTRODES and DRUGS for Ionic Medication can be supplied for use with any of the above Outfits.

Write for full particulars to the British Makers:

NEWTON & CO., 3, Fleet Street, London.

WORKS: 471 & 496, HORNSEY ROAD, N.

Makers of X Ray & Electro-Medical Apparatus of every description.

"SANITAS"

Disinfectants.

THE "SANITAS" CO., LTD.,
LOCKSLEY STREET, LIMEHOUSE, LONDON, E.

Guaranteed Co-efficiencies.

"SANITAS-BACTOX" (Homogeneous) ... 20

"SANITAS-OKOL" (Emulsion) 20

"SANITAS FLUID"—the Standard Disinfectant for Sick Rooms, Nursing, and Operations — a combined Germicide and Oxidant.

"SANITAS OIL."—An excellent remedy for lung and throat affections, by fumigation and inhalation.

"SANITAS-SYPOL" for antiseptic surgery.

ALSO

"Sanitas" Sulphur Fumigating Candles (Kingzett's Patents).
"Sanitas" Formigators for Disinfection by Fumigation.
Disinfectant Fluids, Powders and Soaps of all kinds, etc.

THE LANCET.

No. 4601. Vol. CLXXXI. LONDON, SATURDAY, NOVEMBER 4, 1911. Pp. 160.

CONTENTS.

The whole of the literary matter in THE LANCET is copyright.

A CLINICAL LECTURE on Acute Iritis. Delivered at the West London Post-Graduate College on August 30th, 1911, by N. BISHOP HARMAN, M.A., M.B. Cantab., F.R.C.S.Eng., Assistant Ophthalmic Surgeon, West London Hospital; Ophthalmic Surgeon, Belgrave Hospital for Children; Sometime Examiner in Anatomy, Cambridge University 1247

TWO LECTURES on the Treatment of Diabetes Mellitus. Delivered at St. George's Hospital by EDMUND I. SPRIGGS, M.D. Lond., F.R.C.P. Lond., Senior Assistant Physician to the Hospital.—Lecture II. 1250

ORIGINAL ARTICLES.

Two Cases of Sarcoma of the Thymus. By WILLIAM SHEEN, M.S.Lond., F.R.C.S. Eng., Surgeon, Cardiff Infirmary; Consulting Surgeon, Seamen's Hospital, Cardiff; CORNELIUS A. GRIFFITHS, F.R.C.S. Eng., Assistant Surgeon, Cardiff Infirmary; Consulting Surgeon, Porth Cottage Hospital; and H. A. SCHÖLBERG, M.B. Lond., D.P.H. Camb., Senior Pathologist, Cardiff Infirmary.—(*Illustrated*) 1253

The Operative Treatment of Badly United Fractures. By W. ARBUTHNOT LANE, M.S. Lond., F.R.C.S. Eng., Surgeon to Guy's Hospital; Senior Surgeon to the Hospital for Sick Children, Great Ormond-street.—(*Illustrated*)..... 1255

Cases Illustrating the Use of Venesection. By R. FORTESCUE FOX, M.D.Lond. 1258

The Prevention of Anthrax Infection Due to Imported Hides and Skins. (The Seymour-Jones Formic-Mercury Process). By CONSTANT WELLS PONDER, M.D., D.P.H. Cantab., M.R.C.S. Eng., L.R.C.P. Lond., Second Student, John Lucas Walker Trust; Bacteriologist at the Leathersellers' Company's Technical College, Bermondsey 1260

The Treatment of Bubonic Plague by the Immediate Incision of the Glands. By V. B. NESFIELD, F.R.C.S. Eng., Captain, I.M.S.; Deputy Sanitary Commissioner, First Circle, United Province of Agra and Oudh..... 1262

Acetonuria in Childhood: a Study of its Prevalency in the Medical Wards of a Children's Hospital; with an Inquiry into its Cause. By ROBERT S. FREW, M.D. Edin., M.R.C.P., Medical Registrar, the Hospital for Sick Children, Great Ormond-street, London.—(*Illustrated*) 1264

Experiments on the Causation of Beri-beri. (Preliminary Communication.) By E. A. COOPER, B.Sc., and CASIMIR FUNK, Ph.D. 1266

A Note on the Carbolic Acid Co-efficient of Disinfectants. By F. T. MARCHANT, M.R.S.I., Lecture-Assistant in the Public Health Department of University College, London.—(*Illustrated*)..... 1267

Note on Leishmania and Mosquitoes: The Leishmania-Donovani can Live and Develop in the Intestinal Tract of the Anopheles. By Professor GIUSEPPE FRANCHINI.—(*Illustrated*) 1268

Drill and Development: A Plea for Universal Military Training. By LEONARD B. CANE, M.D., B.C.Cantab., M.R.C.S., L.R.C.P. Lond., Lieutenant, Royal Army Medical Corps (Territorial Force), &c..... 1269

Motoring Notes. By C. T. W. HIRSCH, M.R.C.S. Eng., L.R.C.P. Lond..... 1287

MEDICAL SOCIETIES.

LEEDS & WEST RIDING MEDICO-CHIRURGICAL SOCIETY:
Two New Major Operations.—Exhibition of Cases and Specimens..... 1270

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY:
Exhibition of Cases 1271

MEDICO-CHIRURGICAL SOCIETY OF GLASGOW:
Vaccine Treatment of Gonococcal Arthritis 1271

MEDICO-PSYCHOLOGICAL ASSOCIATION:
Some Remarks on the Diploma in Psychological Medicine 1272

REVIEWS AND NOTICES OF BOOKS.

Biographical Reminiscences of Sir Samuel Wilks 1272
Municipal Chemistry. Edited by Charles Baskerville, Ph.D., F.C.S. 1273
Essays and Clinical Studies. By F. G. Crookshank, M.D. Lond. 1273
Pediatrics. By John Zahorsky 1274
Die Massenverhältnisse des Herzens unter Pathologischen Zuständen. Von Sofus Wideroe..... 1274
Disease in Bone and its Detection by the X Rays. By Edward W. H. Shenton, M.R.C.S. Eng., L.R.C.P. Lond. 1274
Lehrbuch der Pathogenen Mikroorganismen. Die Pathogenen Bakterien. Von Dr. Paul v. Baumgarten..... 1275
Dispensing Made Easy. By W. G. Sutherland, M.B. Aberd. Fourth Edition..... 1275
Urine Examination Made Easy. By Thomas Carruthers, M.A., M.B., Ch.B.Glasg. Second Edition 1275
Forty-Seventh Annual Report of the Boston City Hospital, including the Report of the Superintendent, Feb. 1st, 1910, to Jan. 31st, 1911, inclusive 1275
Plague at Home and Abroad By David Fraser Harris, M.D. Glasg., D.Sc. Lond., F.R.S.E. 1276
Off the Main Tract. By Stanley Portal Hyatt 1276
Edinburgh Medical Journal ... 1276
Dublin Journal of Medical Science 1276
Birmingham Medical Review 1276
West London Medical Journal 1276
Caledonian Medical Journal ... 1276
Annals of Tropical Medicine and Parasitology. Vol. V.... 1276
British Journal of Inebriety... 1277

LEADING ARTICLES.

REPORT OF THE CHIEF MEDICAL OFFICER OF THE BOARD OF EDUCATION 1278
THE RETIRING AGE..... 1279
SUICIDE IN PRISONS 1281

ANNOTATIONS.

The Bacteriological Standardisation of Disinfectants 1282
A "Return" Case of Scarlet Fever 1282
The New Calendar of the Royal College of Surgeons of England 1283
Suppuration in the Accessory Sinuses of the Nose..... 1283
"Toujours Perdrix" 1283
Adenoids and Tonsils 1284
Measles and Ventilation on Board Ship 1284
The Medical Record of Manchester Grammar School 1285
Kala-Azar and the Mosquito... 1285
Gonorrhœal Periostitis of the Long Bones 1286
The Risks of Intravenous Injection of Salvarsan..... 1286
The Royal Institute of Public Health: Berlin Congress, 1912 1287

PUBLIC HEALTH.

Annual Reports of Medical Officers of Health for 1910 ... 1290

VITAL STATISTICS:
Health of English Towns ... 1291
Health of Scotch Towns..... 1292
Health of Irish Towns..... 1292

SPECIAL ARTICLES.

Royal College of Physicians of London 1277
Plague and Fever Prevention in India..... 1288
The London County Council and the Dental Treatment of School Children 1289
The Services..... 1293
Birmingham 1299
Newcastle-on-Tyne 1300
Wales..... 1300
Scotland..... 1301
Ireland 1302
Paris 1302
Berlin..... 1303
Italy 1304
Budapest 13 5
Notes from South Africa 1305
The Reappearance of Plague in Suffolk 1306
The Research Defence Society and Anti-Vivisection Shops.. 1307

CORRESPONDENCE.

The National Insurance Bill (Dr. B. Hall, Dr. Harry Grey, Mr. Albert Benthall, Mr. Vere G. Webb, Dr. Robert R. Rentoul, Mr. S. Constable, Dr. K. M. Gibbins)..... 1294
The Strike and the Death-rate in Liverpool (Prof Benjamin Moore) 1297
Dr. Cuthbert Morton's "Principles of Anatomy" (Dr. Wm. Cuthbert Morton) 1298
The Nomenclature of Spinal Deformities (Mr. J. S. Kellett Smith) 1298
The Etiology of Scarlet Fever (Mr. Herbert Cardin)..... 1299
Old and New Views on the Treatment of Consumption (Dr. Eugene Dupuy) 1299
A Danger to Health in Public Elementary Schools (Mr. H. H. Tidswell) 1311
The Woes of a Public Vaccinator 1311

OBITUARY.

Stanley Smith, M.D. Durh., M.R.C.P. Lond. 1306
Deaths of Eminent Foreign Medical Men 1306

MEDICAL NEWS.

Service for Medical Workers in Brighton 1262
University of Sheffield 1269
Mount Vernon Hospital for Consumption and Diseases of the Chest..... 1272
University of Oxford 1277
Invalid Ladies' Home at Cannes 1277
Royal College of Surgeons of England..... 1289
The Technics of Plumbing..... 1290
University of London: Faculty of Medicine 1292
The Royal Sanitary Institute 1307
Literary Intelligence 1307
Foreign University Intelligence 1307
Medical Sickness and Accident Society 1307
Donations and Bequests 1307
Turin Exhibition Awards 1308
A Proposed Imperial Hospital and Nursing Home 1308
National Association for the After-care of the Feebleminded 1308
Ships' Surgeons: A New Departure in the Peninsular and Oriental Company..... 1308

PARLIAMENTARY INTELLIGENCE.

Notes on Current Topics: The National Insurance Bill 1308
House of Commons: Milk and Dairies Bill.—National Insurance Bill..... 1308

Books, &c., received 1309
Appointments..... 1309
Vacancies..... 1310
Births, Marriages, and Deaths 1310
Notes, Short Comments, and Answers to Correspondents 1311
Medical Diary..... 1312
Meteorological Readings..... 1313
Acknowledgments of Communications received..... 1314

FOR INDEX TO ADVERTISEMENTS SEE PAGES 2 & 4.

INDEX

MEDICAL AND OTHER BOOKS AND PUBLICATIONS

COVER

ADLARD & SON:—
Biographical Reminiscences of Sir Samuel Wilks, Bart. 1

BAILLIERE, TINDALL & COX:—
Accidents in Medico-Legal Aspect.... 1
Bidwell .... Intestinal Surgery 1
Clarke ..... Refraction of the Eye .. 1

CHURCHILL, J. & A.—
Allen's Analysis 1
Cautley..... Feeding of Infants 1
Clowes' Quantitative Analysis..... 1
Corbin & Stewart .. Physics and Chemistry 1
Eden..... Midwifery 1
Fenwick .... Diseases of Stomach .. 1
" .... Cancer and Tumours .. 1
" .... Ulcer 1
Hewlett .... Bacteriology 1
Sequeira .... Skin Diseases 1
Taylor ..... Practice of Medicine .. 1

GLAISHER:—
Savill ..... Lectures on Hysteria .. 1
" ..... Neurasthenia 1

KIMPTON—
Hunter..... Hæmatology 1

LEWIS:—
Fenwick .... Disorders of Digestion.. 1
" .... Dyspepsia of Phthisis .. 1
Roth..... Curvature of the Spine 1

LONGMANS, GREEN & CO.:—
Colyer ..... Dental Disease 1

MACMILLAN & CO.:—
Milligan & Wingrave.. Diseases of the Ear 1
Tubby & Jones..... Surgery of Paralyses .. 1

SAUNDERS COMPANY:—
Mayo Clinic 1

SHAW & SONS:—
Cautley..... Diseases of Children .. 1

PAGE

BAILLIERE, TINDALL & COX:—
Ball ..... Diseases of the Nose, &c. 9
Clarke ..... Congenital Dislocation of the Hip 9
Freyer ..... Enlargement of the Prostate 9
" ..... Urinary Organs 9
Giles ..... Abdominal Operations.. 9
" ..... Gynæcological Diagnosis 9
Lake ..... Diseases of the Ear 9
Leedham-Green .... Gonorrhœa in the Male 9
" .... Sterilisation of Hands.. 9
Mummery .. The Sigmoidoscope 9
Thorne..... Nauheim Treatment of Heart Disease 9

BALE, SONS & DANIELSSON:—
Brown ..... Amœbic or Tropical Dysentery 8
" ..... Sprue and its Treatment 8

CAMBRIDGE UNIV. PRESS:—
Knox..... Climate of Africa 10
Metchnikoff. Infective Diseases..... 10
Myers ..... Experimental Psychology 10
Nuttall..... Blood Immunity, &c. .. 10
Peters ..... Epidemic Diarrhœa 10
Plague Investigations in India 10
Simpson .... Treatise on Plague 10

CASSELL & CO.:—
Berkeley & Beaney.... Gynæcological Surgery 11
Candy ..... Manual of Physics 11
Herman ..... Diseases of Women 12
Morris ..... Diseases of the Skin 11
Thomson, StClair .. Diseases of Nose, &c. .. 11
Treves, Sir F. Surg. Applied Anatomy 11
Whitelegge & Newman Hygiene, &c. 11

CHATTO & WINDUS:—
Beard ..... Enzyme Treatment of Cancer 12

CHURCHILL, J. & A.:—
Cripps ..... Ovariotomy, &c. 12

CORNISH BROS.:—
Sawyer, Sir J. Maladies of the Heart.. 12
" Contributions to Practical Medicine 12
" Insomnia 12

PAGE

FROWDE AND HODDER & STOUGHTON:—
Lockwood .. Aseptic Surgery..... 8
" .. Clinical Lectures and Addresses in Surgery.. 8

GLAISHER:—
West ..... Granular Kidney, &c... 13

HILTON & CO.:—
Ghosh ..... Materia Medica 12

LEWIS:—
Allen..... Vaccine Therapy, &c. .. 5
Bruce ..... System of Radiography 5
Crookshank.. Essays and Clinical Studies 5
Lewers..... Diseases of Women 8
" ..... Cancer of the Uterus 8
Lewis's Medical Ledger 5
Martindale & Westcott .. Extra Pharmacopœia.. 9
Shuttleworth & Potts.... Mentally - Deficient Children 5
Swanzy & Werner.... Diseases of the Eye 5
Thursfield & Branson .. Medical Morbid Anatomy, &c. 5

LIPPINCOTT CO.:—
Fuchs's Text-book of Ophthalmology 6

MACLEHOSE & SONS (GLASGOW):—
Barr & Barr. Diseases of the Ear 8

MACMILLAN & CO.:—
Allbutt, Sir C. Composition of Scientific Papers 7
" Historical Relations of Medicine and Surgery 7
Brunton, Sir L. .... Disorders of Digestion.. 7
" .... Action of Medicines 7
" .... Assimilation, &c. 7
" .... Papers on Circulation.. 7
Jones ..... Therapeutic Inoculation 7
Lockwood .. Appendicitis..... 8
Meanell .... Treatment of Fractures 7
Mercier..... Conduct & its Disorders 7
Milligan & Wingrave.. Diseases of the Ear 7
New System of Medicine 7

METHUEN & CO.:—
Cavanagh .. The Care of the Body .. 13
Childe ..... Control of a Scourge .. 13
Clouston .... The Hygiene of Mind .. 13
Drink Problem 13
Gorst, Sir J. E. Children of the Nation 13
Macfie ..... Air and Health 13
Newman .... Infant Mortality 13
Newsholme.. Prevention of Tuberculosis 13
Oliver, Sir T. Diseases of Occupation 13
Sainsbury .. Drugs, &c. 13
Schofield.... Functional Nerve Disease 13

SAUNDERS COMPANY:—
Mayo, &c. .. Collected Papers 3

SMITH, ELDER & CO.:—
Ellis ..... Demonstrations of Anatomy..... 8
Finlayson's Clinical Manual for the Study of Medical Cases 8
Gamble .... Animal Life..... 8
Juler..... Ophthalmic Science, &c. 8
Lawson .... Diseases &c., of the Eye 8
Leftwich.... Index of Symptoms 8
Macleod .... Hygiene for Nurses 8
Marshall & Hurst .... Practical Zoology..... 8
Playfair .... Science and Practice of Midwifery..... 8
Schäfer .... Practical Histology.... 8

WRIGHT & SONS (BRISTOL):—
Alderton .... Dental Anæsthetics 12
Ely..... Joint Tuberculosis 12
Index of Treatment 6
Lejars' Urgent Surgery 12
Short..... New Physiology, &c. .. 12

MEDICAL LIBRARIES, &c.:—
Baker, Birmingham—
Book Bargains..... 13
Beasley & Ketley—Stammering 13
Behnke—Stammering 13
Financial Review of Reviews 11
Glaisher—Publishers' Remainders.... 13
K., South Molton-street—
Books for sale 81
Matthews Bros.—
Wood: Application of Trusses.... 13

OFFICIAL AND GENERAL ANNOUNCEMENTS

COVER

OFFICIAL NOTICES:—
Royal Society of Medicine..... 1

APPOINTMENTS VACANT:—
Ayr District Asylum..... 79
Bath Royal United Hospital..... 76
Beckett Hospital, Barnsley 76
Belgrave Hos. for Children, Clapham-road 77
Birmingham City Asylum 79
Bury Infirmary 77
Carnarvonshire and Anglesey Infirmary, Bangor 76
City of Birmingham Education Com.. 78
City of Lincoln 79
County Asylum, Cambridge 79
County Asylum, Whittingham..... 77
Croydon Union..... 78
East London Hosp. for Children, &c. 76
Evelina Hospital for Sick Children .. 78
Great Northern Central Hospital 78
Hospital for Consumption, &c..... 78
Hospital for Sick Children 82
Hull Royal Infirmary 77
Ilford Urban District Council 78
Italian Hosp., Queen-sq., Bloomsbury 77
Jenny Lind Infirmary for Children, Norwich 76
Leicester Infirmary 77
London Fever Hospital, Islington .. 79
London Temperance Hospital 76
Manchester Hospital for Consumption 78
Mount Vernon Hos. for Consumption, &c., Hampstead and Northwood 79
Newport and Monmouthshire Hosp.. 79
Paddington Green Children's Hosp. .. 76
Parish of Portsmouth 77
Park Hospital for Children 82
Radium Institute 77
Royal Albert Hospital, Devonport.... 76
Royal Berkshire Hospital, Reading 79
Royal Ear Hospital, Soho 76
Royal Free Hospital, Gray's Inn-road. 76
Royal Hampshire County Hospital .. 77
Royal Hospital, Richmond..... 79
Royal Infirmary and Dispensary, Doncaster..... 77
Royal Naval Medical Service 76
St. Mary's Hospital for Women and Children, Plaistow..... 78
Scarborough Hospital and Dispensary 78
Tunbridge Wells General Hospital .. 78

APPOINTMENTS—(Continued).
University of Glasgow..... 79
University of London 77
Victoria Hospital for Children, Chelsea 76
Wallasey Dispensary and Victoria Central Hospital 77
Walsall and District Hospital 76
West African Medical Staff 79
West End Hospital for Diseases of Nervous System 78
West Kent General Hosp., Maidstone. 78
Wolverhampton and Staffordshire General Hospital..... 77
Wrexham Infirmary..... 78

ASSISTANCIES, MEDICAL:—
Arnold & Sons, Giltspur-street 79
Bulleid, Southwick-street 79
Delta, Walworth-road..... 80
Doughty, Dulwich 80
Griffiths, Newport 79
Locum, Buxton 80
No. 852, L.O., Strand..... 80
No. 856, L.O., Strand..... 80
No. 869, L.O., Strand..... 79
Rosenbaum, Budapest..... 80
Scholastic, Clerical, &c., Association 79
Thackeray, Leeds 79
Turner, Adam-street..... 80
Z.B. 14118, Mosse, Zurich 80

ASYLUMS, HOMES &c.:—
Ashwood House, Kingswinford 69
Association of Medical Men Receiving Resident Patients 78
Barnsley Hall, Bromsgrove 69
Barnwood House Hospital 70
Bishopstone House, Bedford..... 69
Brunton House, Lancaster 75
Buntingford House Retreat, Buntingford 72
Camberwell House, Peckham-road.... 69
Cheadle Royal 69
Clarence Lodge, Clapham-park 69
Colthurst House, Warford..... 73
Coppice, The, Nottingham..... 70
Crooksbury Sanatorium, Surrey 73
Croydon Mental Hospital 69
Dalrymple House, Rickmansworth .. 75
David Lewis Colony, Alderley Edge .. 68
Dinsdale Park, Darlington..... 70
Ghyllwoods 71
Grove House, Church Stretton..... 70
Grove, The, Catton, Norwich 70
Haslemere Nursing Home 75
Haydock Lodge, Newton-le-Willows.. 71
Heigham Hall, Norwich 70

ASYLUMS—(Continued).
Home for Epileptics, Maghull..... 73
Invereden Sanatorium, Cupar 75
Invernith Lodge Sanatorium, Colinsburgh 71
Kinder-Sanatorium, Aross..... 74
Kingsdown House, Box 69
Lady Superintendent, Streatham 76
London Fever Hospital 70
London Open - Air Sanatorium, Wokingham 72
Malling Place, Kent 70
Malvern Hydropathic 74
Manna Mead, Blackheath 75
Melbourne House, Leicester..... 76
Middleton Hall, Co. Durham 69
Moat House, Tamworth 70
Mount Pleasant, Wanstead 75
Newlands House, Tooting 75
Newmains Retreat, Lanarkshire..... 72
Nordrach in Wales Sanatorium 72
Nordrach-on-Dee, Banchory 73
Nordrach-upon-Mendip Sanatorium .. 73
Northumberland House, Finsbury-pk. 69
Northwoods House, Winterbourne.... 71
Norwood Sanatorium, Ltd. 72
No. 724, L.O., Strand..... 75
No. 797, L.O., Strand..... 75
No. 848, L.O., Strand 75
No. 857, L.O., Strand 75
Oscs Island, Heybridge 72
Otto House, West Kensington 75
Painswick Sanatorium..... 73
Peckham House 71
Plympton House, South Devon 70
Portsmouth Corporation Mental Hos.. 70
Ruebury Sanatorium, Northallerton.. 73
St. Andrew's Hospital, Northampton. 70
St. Luke's Hospital, E.C..... 69
Sanatorium Clavadel..... 73
Springfield House Private Asylum, Bedford 70
Stocker, Craven-street 76
Stretton House, Church Stretton..... 70
The Grange, Rotherham 69
Vale of Clwyd Sanatorium..... 73
Warneford Asylum, Oxford 69
Wye House, Buxton 70
Yarrow Convalescent Home, Broadstairs..... 71

COMPANIONS:—
Box 482, Moorgate-street 80

FINANCIAL, &c.—
Equitable Reversionary Interest Soc. 67

HEALTH RESORTS, BATHS, &c.:—
Smedley's, Matlock 74
Wiesbaden 74

HOMES WANTED:—
No. 855, L.O., Strand..... 76
No. 863, L.O., Strand..... 82
Reader, Knightsbridge 76

HOTELS:—
Grand Hotel and Belvedere, Davos Platz 75
Hotel Angst, Bordighera..... 74
Hotel Windsor..... 75
Tensley Guilford-street 76
White Hart Hotel, Margate 75

HOUSE & ESTATE AGENTS:—
Bedford & Co., Wigmore-street 81
Bowditch & Grant, Croydon 81
Elliott, Son & Boyton Vere-street .. 81
Knight, Frank & Rutley, Hanover-sq. 81
Lake & Co., Eastbourne 81
Ley Clark, Wimpole-street 81
McMillan, Lymington 81
Owner, King William-street..... 81
Pratt, Boscombe..... 81
White & Co., Warrington 81
CONSULTING-ROOMS:—
No. 555 L.O., Strand 81
No. 779, L.O., Strand 81
Q., 57, Wigmore-street..... 81

LIFE & FIRE ASSURANCES:—
General Life Assurance Co. 67
Prudential 67

MASSAGE:—
London School of Massage, &c. 67

MEDICAL ACCOUNTANTS, &c.:—
Turner 80

MEDICAL AGENTS:—
Blundell & Rigby 85
Fieldhall, Limited 85
Manchester Clerical, &c., Association. 85
Manchester Medical Agency 94
Medical Agency 85
Needes, Herbert 85
Needes, J. C. 84
Peacock & Hadley 84
Reynolds & Branson 84
Scholastic, Clerical, &c., Assoc. 86
Turner..... 87

(For continuation of Index to Official and General Announcements, and Trade and Miscellaneous Advertisements, see page 4.)

A Clinical Lecture

ON

ACUTE IRITIS.

Delivered at the West London Post-Graduate College on August 30th, 1911,

BY N. BISHOP HARMAN, M.A., M.B. CANTAB., F.R.C.S. ENG.,

ASSISTANT OPHTHALMIC SURGEON, WEST LONDON HOSPITAL; OPHTHALMIC SURGEON, BELGRAVE HOSPITAL FOR CHILDREN; SOMETIME EXAMINER IN ANATOMY, CAMBRIDGE UNIVERSITY.

GENTLEMEN,—The condition chosen for the subject of this lecture is one which must be of interest to every one of you. But it is one upon which it is scarcely possible to say anything new, certainly as regards that most essential part of our work—treatment. My aim will be, therefore, to bring the appearances of this inflammation and its treatment vividly before your mind, so that iritis shall become, as it were, a foe well known in form and feature, one whose presence you will discover with facility, so that having recognised it you may attack it and lay it with all speed and decision.

SOME OLD-TIME WORKS.

This inflammation has been, from some point of view or other, the subject of innumerable disquisitions, both in monographs, papers, and in text-books, and some of these are well worth your study. There is stored up in our libraries a wealth of old-time critical observation, made by men who sought out the truth when aids to diagnosis were far less numerous than now, and as a consequence their minds were the more intent upon elaborating those physical signs which were patent to sight and touch, just those which you can as readily perceive when you are far from a laboratory such as you are accustomed to in a well-equipped clinical school.

To cite only a few such works. You could not do better than spend an evening with the *De Iritide* of Fredericus Augustus ab Ammon, published in 1839; it is written in Latin, yet to anyone who read Cæsar's Commentaries with tolerable facility in his school days the understanding of this work will not be difficult. Then the section on Iritis in the Practical Treatise of Diseases of the Eye by William Mackenzie, of the date 1830, is well worth study; but you must remember that at this date iritis and glaucoma were not well differentiated, so that under "arthritic iritis" we find described what we now know to be something quite different from iritis, and which we call simple or acute glaucoma. Then there is not a man in any of the British services who should fail to read the two little books of John Vetch, sometime a British army surgeon. The one, "An Account of the Ophthalmia which has Appeared in England since the Return of the British Army from Egypt," and the other, "On the Diseases of the Eye," published in 1820. They are small in compass, but weighty in thought and observation, and you will find there a brilliant piece of generalisation upon iritis to which I shall refer later.

Then as regards treatment, one half-hour's reading of a paper by T. Pridgin Teale, jun. (in the Transactions of the Ophthalmological Society of the United Kingdom of 1866), in which he describes his experiments into the separate value of the numerous prescriptions surgeons were wont to fire blunderbuss fashion at their patients, will tell you all that is really worth knowing on the subject.

Not one of you can afford to be without a practical acquaintance with this inflammation and its treatment, and a comparison of your personal observations with the observations of those who led the way into the knowledge of to-day will prove an exercise of the greatest value.

REMARKS ON DIAGNOSIS.

In this lecture I propose we should confine our attention to acute iritis, and exclude from our consideration iritis due to injury, from sympathetic inflammation, and those forms of subacute and chronic inflammation associated with cyclitis and changes in Descemet's membrane.

To the untrained, and therefore unperceiving, eye of the casual onlooker any violent inflammation of the eye looks much the same, and the sensations complained of by the patient may seem indistinguishable. Acute iritis, acute glaucoma, and acute conjunctivitis all produce an intense redness of the white of the eyes, all reduce the clearness of vision, and all cause pain more or less severe. But to you must come the sharpness of vision and keenness of understanding which shall see beyond this general likeness and recognise essential points of difference, for upon your diagnosis must follow prompt and vigorous treatment, which, if it be appropriate, will result in a speedy relief to the patient, but if it be inappropriate will result in disaster and perhaps blindness. Treatment that is a sure cure for iritis is certain blindness for glaucoma, and what is good for a conjunctivitis is unmitigated evil for both iritis and glaucoma.

THE SCHEME OF THE IRIS.

For a proper understanding of the state of the iris in acute inflammation, and of the rationale of the treatment thereof, a knowledge of the structure of this most beautiful of organs is essential. I do not propose to enter into details of anatomy you can find in any good text-book, but let me attempt to give you a graphic idea of it.

Conceive it as a curtain set up to divide the eye into two unequal parts. The basis of the curtain is a loose skeleton or spongework of connective tissue; it is complete save for a circular hole piercing its middle. The skeleton forms a scaffolding upon which are hung a series of muscles, blood-vessels, and nerves. Of muscles two sets; one to close the mouth of the central hole, and another to drag it widely open. Of vessels plenty, arranged in two rings, the larger at the attachment of the curtain and a smaller around the hole, with numerous communications between them. Of nerves an intricate plexus, following the lines of the muscles and vessels, and intimately communicating with both. The curtain is painted behind with a layer of rich pigment, which penetrates more or less into the substance, and in some subjects even to the face of the curtain, so as to produce an infinite variety of colours and markings.

Such a curtain must needs be very "lively"; it presents infinite possibilities of movement, and a delicate susceptibility to influences, good or bad, that may arise from the state of its owner. The looseness of the spongework that forms its basis and the richness of its blood-supply suggest how readily it will swell in states of inflammation; the complexity of its nerves, and their intimate association with those others both within and without the eyeball, tell how severe must be the pain of such inflammations; and lastly, the thinness and incompleteness of its covering tell how certainly inflammatory fluids within its mesh will escape to the surface as exudates, which, if they be coagulable, will glue the curtain to whatever it touches. Were this curtain a thing of mechanics of large and handleable size, and were we to substitute some other fluid for the blood, you would have no hesitation to press back the curtain and empty its mesh of its superabundant fluid, just as you would squeeze a sponge and prevent its sticky surface adhering to whatever it might be in contact with. That is the whole secret of the treatment of iritis, as we shall see in the following striking case.

A TEXTUAL CASE.

A man, aged 44, was seen at the West London Hospital just a year ago with all the symptoms of a most intense iritis in the left eye. He said that the eye began to be red two days previously, and since then on account of the intense pain he had had no sleep. The eyelids were swollen and blotchy, tears coursed down his cheek, and he turned his head away from the light. When the eyelids were parted the conjunctiva was seen to be a fiery red, there was no pus or muco-pus, and, except for a little froth due to an excessive secretion from the Meibomian glands which had collected about the inner canthus and in the lacus lacrymalis, the conjunctiva was shining and bright. The cornea was slightly hazy, and within the anterior chamber and filling full two-thirds of its cavity was a jelly-like mass. The mass was conterminous with the rim of the cornea towards the nasal and lower borders, but elsewhere it was free and presented a smooth rounded edge. It was semi-transparent, so that through it could be seen a contracted and irregular pupil partly blocked with white material. The whole of the iris had a swollen and dirty appearance, in marked contrast to the clean bright iris of the healthy eye.

The eye was exquisitely tender to the touch, and the tension of the globe fuller than that of the healthy side.

On examining the conjunctiva closely it was evident that every blood-vessel was engorged with blood, their finest ramifications and anastomoses could be traced out; but besides these vessels those deep to the conjunctiva which run in the episcleral tissue and those that perforate the sclera were equally engorged. The distinction of these two sets of vessels was clear: there was an obvious difference in depth; there were differences in colour, for the surface vessels were brick-red and the deeper ones of a dusky red colour; but the main distinction could be made certain by gently moving the conjunctiva from side to side by means of pressure through the eyelid, then the conjunctival vessels were seen to ride over the fixed scleral vessels. Tracing these deeper vessels we could see how engorged they were at the points of penetration into the sclera to reach the ciliary region and how prominent were the fine vessels which form a close network about the limbus of the cornea. The features of this engorgement of the deeper vessels pointed to an inflammation of the structures within the eye, and particularly of the ciliary body and the iris with which these vessels are directly associated. The engorgement of the conjunctival vessels then appeared in its true light, merely a coincident effect of the intensity of an inflammation which, as by a spreading wave, upheaved all those parts contiguous with it.

Similarly, examining that part of the iris not covered by the jelly-like mass within the anterior chamber, we could see upon its surface points of bright red colour, and these when examined with the corneal loupe resolved themselves into a number of small blood-vessels which bulged from the surface of the iris by reason of their engorgement with blood.

Next in order for solution came the problem of the jelly-like mass within the anterior chamber. Its shape and apparent solidity suggested at once a comparison to the size, shape, and consistency of the crystalline lens, and I have heard it said that such a condition was once mistaken for a dislocated lens. A further examination of the iris was enough to dispel any possible thought that an accidental dislocation of the lens might account for this case. It was clear the iris was well supported behind, for it was not tremulous, neither did it appear to be depressed backwards towards the posterior chamber. Nothing but the lens in its proper place could support the iris so exactly as this iris was supported, so the jelly-like mass must be some adventitious product. Despite its appearance of structure and solidity it could be nothing else than a coagulum, a clot of exudate poured out from the inflamed iris and ciliary body. The disturbance of these organs had altered the character of the aqueous, so that instead of a mildly albuminous fluid it had become rich in fibrin and albuminous coagulable albumins, with the result that it had clotted and made a cast of the anterior chamber, and the clot after its kind had shrunk away from its mould to produce the singular appearance of this picture.

That the symptoms of this man's condition were correctly read was evident, for the effects of the treatment, based upon the diagnosis, were such that in three days' time the coagulum had completely disappeared, the pupil was widely dilated, the exudate upon the lens capsule gone, and there was naught to tell how nearly the inflamed iris had been glued down to the lens save one lump of brown uveal pigment on the lens and a corresponding gap in the uveal edge of the iris.

To complete the history of this case, the man acknowledged having suffered an attack of gonorrhœal urethritis 25 years ago and to having acute rheumatism of his knees shortly after. He had had iritis 12 years ago. He denied contracting syphilis, and the Wassermann reaction examined by Dr. Julius Bernstein was negative.

Six months after the severe attack I have detailed his left eye became painful, there was marked injection of the ciliary vessels, and when the iris was dilated the earliest physical signs of a cyclitis could be detected in the vitreous close behind the iris. By examining this with the direct ophthalmoscope and a high convex lens the centre of the vitreous had a properly clear and unclouded character, but the peripheral region close to the ciliary body was clouded by reason of numberless fine dots; in this change could be seen the effects of an altered secretion from the inflamed ciliary body.

THE SIGNS OF IRITIS, GLAUCOMA, AND CONJUNCTIVITIS CONTRASTED.

Now the iritis in the case I have narrated was one of great severity, the physical signs of iritis were writ large, and in almost dramatic fashion. You will not always get the diagnosis written so boldly on every case you see, yet the signs will be the same, and as recognisable on careful search. Let us go over the more important symptoms, and compare them with those of diseases with which confusion is most likely to arise, glaucoma and conjunctivitis. Conjunctivitis is particularly an affection of the young, acute iritis of adults, and glaucoma of the elders, yet each may occur at any age, and in some points their symptoms may coincide.

The character of the pupil I put first. There is no one condition by which a distinction between iritis, glaucoma, and conjunctivitis may be made; but if you were confined to one point for your diagnosis, the pupil should be your choice. In iritis of even mild degree it is altered in shape; as compared with the other eye it is smaller and less round. When we shade the eye it does not dilate well, and when again exposed to the light it does not contract promptly; its reaction is sluggish, or if the iritis has been of some days duration the pupil may be fixed. These symptoms are due, first, to the inertia of a membrane engorged with blood and exudates; and secondly, and particularly, because the pupillary margin is gummed to the lens capsule by the sticky exudates of inflammation, or fixed by the succeeding adhesions. It is these that cause the irregularity in the contour of the pupil, and they can be seen quite plainly when we attempt to dilate the pupil. By contrast, in conjunctivitis the pupil is unaffected, its reactions are brisk or even excessive. In glaucoma the pupil suffers from the increased intra-ocular pressure, which causes a partial paralysis of the sphincter so that the pupil is larger than that on the normal side, its contour oval, and its reactions lost.

The altered colour of the iris is striking in acute iritis; the blue eye becomes dirty green and the brown becomes muddy. These effects are due to the lymph that exudes on the surface and to the increased vascularity. Similar effects are seen in glaucoma, but not in conjunctivitis.

The character of the injection of the vessels over the surface of the globe is not a sign upon which to put great reliance. In iritis and glaucoma the disturbance is so great as not only to cause engorgement of the scleral vessels, but to involve those of the conjunctiva and eyelids. In severe conjunctivitis the converse may be seen, the conjunctival injection spreading to the scleral vessels. But in cases of lesser severity one could scarcely fail to suspect irritation of the iris and ciliary body when there was present a delicate circumcorneal blush without conjunctival injection.

Pain is present in all three of these acute inflammations. But the character of it as a diagnostic sign may be rather unreliable. Patients differ so greatly in their sensations and in their mode of expressing them. Yet there are broad differences in their sensations. In conjunctivitis their complaint is usually of something under the lids—dirt, sand, or even glass. This is because the nerve terminals in their irritation translate their feelings in terms of their usual warning—dust in the eye! In iritis there is pain within the eyeball, and referred pain over the brow and root of the nose, for the iris gains its nerve-supply from branches of the nasal branch of the ophthalmic division of the fifth. In acute glaucoma the pain is more intense, both in the eye itself and in referred pain, so that it may involve the areas of the first, the second, and even the third divisions of the fifth nerve; it may be so severe as to cause sickness or actual vomiting.

Discharge is, of course, characteristic of conjunctivitis, and it is absent from iritis and glaucoma—there is only excess of tears. But one must beware of mistaking excessive Meibomian secretion for discharge; it can be seen in almost any tearful state as a fine white froth along the edges of the lids and at the inner canthus.

The transparency of the cornea is usually but little affected in the early stages of acute iritis. In conjunctivitis it is clear unless infective ulcers occur. In glaucoma it is "steamy," fluid is driven into it by the excessive intra-ocular pressure.

The depth of the anterior chamber varies so much with age that much stress must not be laid upon it. A very shallow chamber undoubtedly points to glaucoma, although the reverse may occur. In conjunctivitis it should not vary

from the unaffected eye. In iritis it may be normal or slightly deeper, and perhaps filled with turbid contents or even a coagulum, such as in the case described.

Vision is affected in all three conditions, least in conjunctivitis, most in glaucoma. In conjunctivitis the disburbance varies with the chemosis, presence of ulcers, and the character of the discharge. In by far the most cases it is only disturbed by the particles of mucus or pus that stick or float over the surface of the cornea. In iritis vision is clouded by the exudates on the lens capsule. In glaucoma it is rapidly lost by pressure on the optic nerve head, but before this occurs and blindness sets in the steaminess of the cornea gives rise to certain subjective symptoms which anyone can see for himself by breathing on a sheet of glass and quickly looking at a candle flame through the steamed medium.

After we have looked at the eye from every possible point of view we may venture to handle it. By palpation we can determine its sensitiveness and its tension. The globe is tender to pressure in acute iritis, particularly in the ciliary region; it is exquisitely tender in all its parts in glaucoma. By way of contrast, the sensibility of the cornea to light surface contact, such as is produced by the touch of a wisp of cotton-wool, is lost in glaucoma, for the internal pressure of the eye renders the fine terminals anæsthetic. In iritis the cornea does not loose sensibility. Palpation elicits no tenderness in conjunctivitis.

Next as regards the tension of the globe, high tension is the characteristic of glaucoma, and in acute cases the hardness of the eyeball is unmistakable. But it must be borne in mind that a moderate increase in tension is by no means rare in acute iritis; the muddy fibrinous aqueous of inflammation passes through the drainage area with difficulty, its escape is delayed, so that tension within the globe is raised.

Looking over these notes of differential diagnosis one may remark that there are not a few troublesome "ifs" and "buts" that spoil otherwise prime points of distinction. This is true. One symptom does not make a disease any more than one swallow a summer. Yet if there be one symptom upon which I would lay stress it is upon the character of the pupil. It is normal in acute conjunctivitis, small and sluggish in acute iritis, wide and paralytic in acute glaucoma. As I have said, too much care cannot be expended in examining its character with the naked eye, or better with oblique illumination and a good binocular magnifying glass. The glaucomatous pupil can scarcely be confounded with the normal or iritic pupil. But it is possible for difficulty to arise in the case of a pupil contracted by iritis and one that is small by reason of age. Elderly people naturally have small pupils with sluggish reactions, and in such patients a conjunctivitis may be mistaken for an iritis. The systematic examination of the healthy eye of a patient before the affected eye is looked at will insure against many mistakes, and particularly against such an one as this. But there are some cases in which the point can only be determined by the instillation of a drop of homatropine so as to dilate the pupil; an iritis would be disclosed by irregular dilatation; a full round pupil would exclude iritis.

THE CAUSES OF ACUTE IRITIS.

I propose to say very little on this head—not because there is little interest in its discussion, but because by so doing I wish to impress upon you the fact that the primary cause of the inflammation has little or no bearing upon the direct treatment of the inflammation.

Venereal disease accounts for the majority, possibly more than 75 per cent. of all cases. Secondary syphilis accounts for fully half. The coincidence of sore throat, a typical body rash, and iritis is not uncommon, and it is indisputable evidence of a common origin for the three symptoms. It is the only variety of acute iritis which bears anything like a special feature, for in this there are frequently seen small nodules of yellow colour spotted with pink vessels along the pupillary border; these are granulomata, and at their site the inflammation is most intense and massive synechiæ most likely to occur.

Next in order of frequency come gonorrhœal and rheumatic iritis. For the present it is not possible to separate the two. There has always been a conflict of opinion as to how far one or other of these affections determined iritis. Of the causal relation of gonorrhœa to iritis in certain subjects there can be small room for doubt. Vetch appears to have been the first to have seen what might be called the gonorrhœal syndrome. There is his remarkable observation of the liability to the succession in the same subject of gonorrhœal urethritis, purulent ophthalmia, arthritis, and iritis, an observation which Mackenzie, writing 20 years later, stigmatised contemptuously as a "notion" and "a good example of a hasty generalisation in regard to diseases between which no other relation than that of concurrence has been pointed out." The conclusion of Vetch is sure enough to-day, at least so far as the urethritis, purulent ophthalmia, and arthritis are concerned, only we cannot definitely prove the iritis, for the organism recoverable from each of the others of the syndrome has not been recovered in it.

Rheumatic iritis has been scouted by some. It is remarkable how rarely we see iritis in the subjects of acute rheumatic fever; and never an iritis during its progress or convalescence, notwithstanding the frequency of inflammations of other serous membranes. Recently Paine and Poynton have shown that the injection into rabbits of the micrococcus rheumaticus can produce iritis with exudation into the anterior chamber, and from these cases they have recovered the organism. I have seen some cases of these animal infections produced by other workers; there was no doubt of the iritis, but the massive purulent exudate in the anterior chamber suggested rather a pyæmia than an ordinary acute iritis. At present the point cannot be determined, its interest is undeniable, but so far as the direct treatment of the iritis is concerned it does not matter in the least.

Then there remain a residuum of some few cases where iritis has occurred during, or closely after, acute fevers—e.g., malaria, typhoid, influenza, and even mumps; or subsequent to exposure to cold or undue strain. These cases are of milder type than that described above, but they are just as liable to produce synechiæ and endanger the vision. Of malarial iritis I have seen very few cases. One of these I remember well. The subject was a naval pensioner sent on to me with this diagnosis. He denied any venereal infection, but he acknowledged having been an in-patient of a naval hospital with swollen knees and hand-joints, for which the diagnosis "sequelæ of gonorrhœa" was written on his sheet! Of typhoid fever I saw more than enough when on service in the South African War, but in not one case did I see an acute iritis at any stage of the fever or of convalescence, nor did I hear of a case from any of my numerous fellow officers.

The determination of the origin of any given case of acute iritis is by no means easy. When syphilis, gonorrhœa, and rheumatism appear to be reasonably excluded, we naturally fall back upon the nearest untoward incident in the life of our patient as likely to be the determining factor. Considering the structure of the iris it would not be a matter for wonder if all these incidents did set up iritis, so that this inflammation were much more common than it is. But the remembrance of the number of folk in all kinds of states of life and nutrition who suffer these incidents with never a trace of iritis makes us wonder what are the primary causes of these rare cases. If an incident innocuous to the irides of most patients does become a determining excitant in these few, what underlying diathesis or vulnerability favoured the incident? These are speculations which you can pursue in your leisured moments: to follow them now would lengthen this lecture interminately.

THE TREATMENT OF ACUTE IRITIS.

An examination of ancient medical works will show that at different periods systems of pathology have exerted a profound influence upon the principles of treatment. At one period the fashion was all for local applications to an inflamed or sympathetic part; at yet another period the whole body was afflicted with a humour which flamed out in one spot, and the modification or dispersal of that humour could alone relieve the local inflammation. The same ideas are found in folk medicine to-day, and they are no more strange than the action of a learned physician of the eighteenth century, who records with much pride his disastrous treatment of an infant with ophthalmia neonatorum by physicking the mother.

In approaching a case of acute iritis it is well to take sides, not one, but both sides. First be a devotee of direct applications to the eye. Then, when you have set going all that you can on that score, turn about and become a devotee of

the humoral pathology. Let us call the first direct treatment, and the second indirect treatment, and consider these two sides.

Direct Treatment.

Reverting to our similitude of the sponge-like curtain of the iris, let us treat the iris as one would a spongy curtain loaded with sticky fluid and flopped upon the clear glass of the window. To leave the curtain thus would effectually close the window. We should certainly draw back the sodden curtain, and squeeze out the sticky fluid from its texture. We can do this very thing with an inflamed iris. In atropine we have a most effective drug to fling wide the pupil and fold back the iris. That action determined upon, how best can we use the drug? There is no better preparation than an ointment of the sulphate of atropine combined with hydrochlorate of cocaine, 2 per cent. of each, in equal parts of lanoline and vaseline. This is the most effective midriatic known. A small piece should be placed within the lower lid every hour for the first four hours, and then every two hours until the pupil is widely dilated. Later, the strength and the frequency of the application may be reduced to 1 per cent., night and morning. Taken at the outset, the worst case of iritis will react to this treatment, and to this alone; and both pain and injection will abate as the pupil dilates.

But we need not despise adjuvants to this essential treatment. Moist heat is a great reducer of pain and most comforting to the eye, so we employ relays of hot fomentations. Or in the worst cases, such as that of the man cited, we may blanch the region of the eye by withdrawing blood by leeches applied to the outer canthus, and in this way materially hasten the action of the atropine. The severity of the pain may be checked, at least temporarily, by instilling a 5 per cent. solution of dionine, a derivative of morphia, and to some extent the drug acts upon the blood and lymph circulations, but its effects are not constant.

To what length of time may this vigorous action be continued, it may be asked. So far as the atropine and fomentations are concerned, until the injection has declined. The fomentations *ad libitum*, but the atropine in just sufficient strength to keep the pupil open.

But if the pupil will not dilate by reason of adhesions, what then should be done? Here our action must be guided by the character of the adhesions. If they are tough and white, the result of an earlier attack, atropine is useless. We must rely upon fomentations and leeches to reduce the inflammation and then free the occluded pupil by a judicious iridectomy. If the synechiæ are brown or yellowish, and therefore recent, the full strength of the atropine should be employed for at least three days before the attempt to break them down is given up. In this matter practice differs. Bronner does not hesitate to release an adherent and inflamed iris by an immediate iridectomy. Elliot relies upon the reaction of subconjunctival injections of normal saline solution to secure the same result.

Indirect Treatment.

Now turning to the other side, we consider how we can attack the inflamed eye through the body. Part of this attack should be routine treatment in every case; part will vary as our diagnosis of the primary cause of the iritis varies.

In every case at the outset a smart purge should be given. The subjects of iritis nearly always have foul mouths and breath, and are constipated. Any drug that will give a free and watery stool will do, and to aid this plenty of water should be given with and after the draught. Absolute rest in bed in a dark room should be insisted upon, and alcohol and tobacco made taboo.

Lastly, in any case of which the origin is indeterminate or pending its determination an alterative is useful, and there is no better than the iodide of mercury—5 grains of iodide of potassium with a drachm of the liquor of perchloride of mercury. If the case be syphilitic it is first-rate treatment; if it be due to gonorrhœal rheumatism it is good—better than vaccine treatment; only if there be arthritis at the time salicylates or aceto-salicylic acid are better.

At this point your question will be on the use of salvarsan. Should this be injected in a case of indubitable syphilis? That depends. First, is the case bad enough to put the patient to this added discomfort and risk, seeing that without doubt simpler methods will speedily reduce the iritis? Secondly, is he fit enough to be subjected to the treatment, which is undoubtedly severe? The answers to both these points will be qualified by the presence or absence of other symptoms of syphilis; with evidence of the general activity of the poison the case for injection would be strong. But the final choice will rest with the patient, to whom the advantages and disadvantages of the proposition must be fairly put.

In conclusion, no matter how superlative a mode of general treatment may be evolved now or at some future date, general treatment can never oust atropine from the first, the middle, and the last place in our first line of offence against iritis. That was the finding of Teale's paper of 1866, and it remains true to-day.

Two Lectures
ON
THE TREATMENT OF DIABETES MELLITUS

Delivered at St. George's Hospital

BY EDMUND I. SPRIGGS, M.D. LOND., F.R.C.P. LOND.,
SENIOR ASSISTANT PHYSICIAN TO THE HOSPITAL.

LECTURE II.[1]

GENTLEMEN,—I propose to-day to speak of the treatment of cases of diabetes mellitus in which *diacetic acid is present in the urine*, and, at the risk of repetition, must remind you that the presence of fatty acids in the urine shows that the amount of carbohydrate which can be burnt by the tissues has fallen so low that fat has to be oxidised with great rapidity to supply the needs of the body, with the result that its combustion is incomplete. It is also probable that a certain amount of carbohydrate is essential in civilised man to furnish food to the cells which metabolise the fat. The presence of fatty acids in the tissues would be fatal did not the body possess means of neutralising the excess of acid. This is done to some extent by giving up bases such as calcium, magnesium, potassium, and sodium from the tissues, but chiefly by providing the base ammonia, which, instead of leaving the body as urea, renders the acid harmless by forming an ammonium salt with it, and is passed out in that form. In some cases very large quantities of ammonia may be excreted every day, and when no alkali is being prescribed the amount of ammonia in the urine may be taken as a general guide to the severity of the acidosis.

TREATMENT OF CASES WITH DIACETURIA.

In this condition, the objects of treatment are, first, to maintain nutrition; secondly, to reduce the rate of the metabolism of fat to its former level by increasing the amount of carbohydrate which can be assimilated; and, thirdly, to supply alkali to neutralise the excess of fatty acids produced. The essential feature of the dietetic treatment of diabetes is, of course, exactly the same whether diacetic acid is present in the urine or not—namely, so to order the diet that a maximum amount of carbohydrate may be assimilated. The difference between the two classes of cases is that when diacetic acid is present dietetic restrictions must be made much more cautiously, a liberal supply of alkali being given at the same time. There is no doubt that many patients have passed into coma soon after they have been put upon a strict diabetic diet. If patients really adhered to the diet ordered this would have happened oftener. If any severe diabetic is given such a diet, within a few days he is liable to become drowsy and to suffer from distaste for food, pain in the abdomen, nausea, and constipation. These symptoms commonly pass off, but they may lead to coma. Beddard, Pembrey, and myself[2] have shown that this state is pathologically identical with the early state of coma, as it certainly is clinically, and is associated with a fall in the alkalinity of the blood and in the amount of carbon dioxide in the expired air. In severe cases, then, you must be careful before each

[1] Lecture I. was published in THE LANCET of Oct. 28th, 1911, p. 1184.
[2] See THE LANCET, May 16th, 1903, p. 1366. Brit. Med. Jour., vol. II., 1910.

restriction of diet to see that the urine is made neutral by giving bicarbonate of soda.

You may say, with all these warnings, Is it essential to restrict the diet? The answer is that it is. Restriction of carbohydrate is, in the present state of our knowledge, the only means by which the power of the body to burn carbohydrate can be restored. It is astonishing what an improvement follows when you have successfully led your patient on to a strict diet; and, on the other hand, how easily the assimilative power is lost again, and all your work undone, if the patient succumbs to the temptation to indulge in an excess of starchy and sugary foods.

Arrangement of Diet.

In the cases associated with diacetic acid in the urine, when you have reached the strictest diet which I have mentioned so far—namely, that described in my last lecture, containing 48 grammes of carbohydrate—you will not infrequently find that sugar is still present in the urine. In that case you must put your patient on a protein and fat diet containing only traces of carbohydrate, prescribing at the same time a suitable quantity of alkali. Here is such a scheme:—

Breakfast.—Bacon and eggs; starch-free bread, butter; sugar-free marmalade; coffee, with cream.
11 a.m.—Half-a-pint of sugar-free milk; diabetic biscuits, with butter.
Lunch.—Fish, or lobster; starchless bread, butter, and cheese; sugar-free ginger ale, lemonade, or lime juice, or whisky and water.
Tea.—Tea, with cream; two boiled eggs, with starch-free bread-and-butter; diabetic biscuits and cakes.
Dinner.—Clear soup, fish, meat, poultry or game; egg custard, made with cream and sweetened with glycerine; starch-free bread; cheese; beverages as at lunch.

On such a diet large quantities of meat and fat must be eaten if the needs of the body are to be met. With mixed food we usually derive half of the caloric energy we require from the burning of carbohydrate. All this must be made up with protein and fat. Ordinary helpings of meat and fish are insufficient. The patient should have two or three dishes of meat and fish at dinner, if possible, and eat freely of each.

After a day or two of the strict diet the sugar, if any, persisting in the urine is derived from the tissues and not from the food. The diet should be continued so long as the sugar in the urine is falling in quantity, provided that the general condition of the patient is good.

A further reduction in the sugar may be obtained in some cases if opium is given in doses of half a grain upwards three times a day, or codeine beginning with half a grain twice a day and increasing the dose until 4–6 grains a day are being taken; or, if neither of these leads to much improvement, in some cases aspirin in doses of 15–45 grains a day will lead to a fall of the amount of sugar in the urine. None of these drugs, however, have much effect if the diet is not being regulated.

Lastly, the effect of a day upon a diet consisting mainly of vegetables such as I will detail to you when speaking of the oatmeal "cure" may be effectual in further reducing the sugar.

In cases in which you cannot get rid of all the sugar in the urine attention is then directed to finding out on what diet most carbohydrate is utilised. In such it is of more importance for a good deal of the carbohydrate to be assimilated than it is to get rid of the sugar in the urine. Hence when you add carbohydrate to the diet you must observe carefully not only whether or not there is an increase in the amount of sugar in the urine, but how much that increase, if present, is in comparison with what was added to the food. For instance, if a patient on a strict diet is passing 40 grammes of sugar a day, and on adding 4 ounces of bread the amount rises to 60 grammes, then we know that of the 72 grammes of starch in the 4 ounces of bread 52 were assimilated and 20 added to the unoxidised sugar in the urine. The patient, therefore, has gained 52 grammes of carbohydrate, which will give him over 200 calories of energy and will save him from having to expend a corresponding quantity of fat or protein.

When you have made these observations upon various diets you will be in a position to make regulations which will vary according to the results you obtain and the circumstances of each patient. In some cases the diacetic acid and sugar will disappear and remain absent if the patient takes a diet with moderate restrictions, and will not reappear when most of the restrictions are gradually removed. In others more stringent injunctions must be given. The best way to maintain the assimilative power over long periods is to interpose a day or more of strict diet at fixed intervals. For example, a patient two years ago excreted 60 to 80 grammes of sugar a day and suffered from eczema and boils. The urine gave a strong diacetic acid reaction. Restriction of diet with alkalising of the urine led to very little reduction of the sugar. He was then ordered a varied diet containing about 50 grammes of carbohydrate, since the addition of this amount only led to an increase of 15 grammes in the urine; that is, $50 - 15 = 35$ grammes were utilised. But on one day in every week an absolutely strict diet was taken containing only the foods in List 1 and the various starchless foods sold. Under this treatment the sugar in the urine fell in a year to an average of 40 grammes, and the diacetic reaction was reduced in intensity. The carbohydrate was then reduced to 25 grammes a day with one absolutely strict day a week; nine months later the average excretion in the urine is 20 grammes, the patient being in good condition.

In other patients it is often a good thing to advise one strict day a week and three consecutive strict days a month—say, for example, the last three days of the month.

But some patients not only cannot tolerate great restriction, but do badly on it. In all difficulties the weight of the patient will be an important guide. Do not focus your attention too closely upon the amount of sugar passed out. The general nutrition and the risk of acid poisoning must in severe cases receive first attention. If the weight is falling after dietetic regulation has been tried you will often do wisely in increasing the carbohydrate, especially in the form of oatmeal, or, in some patients, of potatoes.

Fuller Examination of the Urine.

I have so far only spoken of investigations into the disordered metabolism of this disease which you can yourselves carry out. I must not conceal from you, however, that other information can be obtained from a fuller examination of the urine, which is of great value in the prognosis and in the treatment of the disease. The estimation of the ammonia gives information as to the severity of the acidosis and the effect which the administration of alkali has in neutralising the acids produced. The estimation of diacetic acid and acetone, which is carried out as one estimation after converting the diacetic acid to acetone, or of acetone separately, will show what effect the treatment has upon the production of those bodies. The estimation of the total nitrogenous metabolism will give information as to the diet which is most useful in helping you to maintain the nitrogenous balance. For these purposes repeated determinations must be made, and the work will involve the whole time of an analyst so long as the patient is under accurate observation. Such a method of dealing with a case ought to be carried out whenever possible, to the great advantage of the patient, but unfortunately the expense is considerable.

You will see, gentlemen, how individual a matter is the treatment of diabetes. There is no generally applicable rule. Both restrictions and allowances may do good and harm according to the state of metabolism of the particular patient.

Beverages.

Tea and coffee, of course without sugar, water, aerated water, and the sugar-free lemonades, lime-juice, and other beverages now sold may be drunk. The fluids should not be restricted. The cause of the thirst is the accumulation of sugar in the tissues and blood, and abundance of fluid is required to enable the kidney to turn it out with a minimum of labour. As soon as the excess of sugar in the tissues is reduced by dietetic means the thirst is allayed. Opium also reduces thirst, but merely by lessening sensation, and cannot, therefore, be recommended for this purpose.

Diabetes is a disease in which you would expect alcohol to be of value, for alcohol is an oxidisable carbon compound which can to some extent replace carbohydrate or fat in the food. It has been very widely used in diabetes and a good number of observations made, from which it is clear that alcohol has little or no effect upon the quantity of sugar in the urine. The fact is, the amount of food value in the form of alcohol which can be got into the body without causing symptoms of poisoning in an ordinary individual is comparatively small. It has been observed, however, that less of the acetone bodies is passed out when alcohol is taken. The drug must, of course, be prescribed in a sugar-free form, such as that of well-diluted distilled spirit. Excess must be avoided, and has been known to precipitate a fatal ending.

DIABETIC FOODS.

The various diabetic breads and other foods sold are of the greatest value in the treatment of diabetes; indeed, it is only by their help that the proper conduct of many cases is possible. But you must have such foods examined from time to time, for many of them contain a great deal of starch. Some manufacturers are reliable, but you can seldom keep to one kind indefinitely because the patient will desire a change occasionally in order to obtain a variety of diet, and variety, as I have mentioned already, is necessary if the patient is to take a sufficient amount of food. You will recommend patients to keep to a few makers whose breads and biscuits have been found to be what they are represented, and whenever a new food is brought to your notice have it analysed. If your experience agrees with mine, you will also regard it with scepticism until the analysis has been made. The manufacture of starch-free foods, or nearly starch-free foods, is necessarily expensive, and such foods must sell at a high price. There is accordingly a large profit to be made by selling foods which contain a good proportion of starch as diabetic foods. You may regard any foods as satisfactory which contain under 5 per cent. of starch and sugar in the dried sample, as the specimens of Callard's and Protene bread, which Mr. Gardner has analysed for me, usually do.

There are some breads which do not profess to be starch-free, but which contain less starch than ordinary bread. These may be very useful to those cases whom you are allowing a measured quantity of bread, so long as you know exactly what you are prescribing. For instance, a patient who is allowed 3 ounces of ordinary bread in the day may take 6 ounces of Brusson Jeune bread, an increase for which he will often be very grateful. This bread would, however, be quite unsuitable for unlimited allowance among the foods of List 1.

Many patients will tell you that they have been taking brown bread or toast, or bread made from some flour which has a special reputation in the locality. Toast is, of course, equivalent to the quantity of bread used in making it. Nearly all the "special" flours of local fame which I have had analysed so far have contained nearly as much or as much starch as ordinary flour. Genuine diabetic bread is difficult to get in some parts of the continent. I have had several samples of gluten bread and almond bread sent for analysis from abroad which have contained 30 per cent. of starch.

THE "OATMEAL CURE."

I have mentioned that some patients bear one form of starch better than another. The "oatmeal cure" is founded on this fact. It must not be used in severe cases or in cases complicated by nephritis; and is only to be ordered after the course of dietetic treatment has led to a reduction of sugar in the urine to as low a figure as possible. Oatmeal porridge is taken in quantities of 8 to 10 ounces every two hours, while during the day 6 to 8 ounces of butter and 3 to 4 ounces of vegetable protein, or 5 to 8 eggs, are taken, cooked in various ways. Black coffee, tea, lemon-juice, and a little wine or diluted spirit are allowed. After three or four days a diet consisting mainly of vegetables is substituted for a couple of days; this diet includes tomatoes, cucumbers, asparagus, spinach, and cauliflower, with butter, bacon, and five or more eggs. After the two days 6 to 8 ounces of fish are allowed as well, then 6 ounces of meat, followed in a day or two by cheese and cream. The treatment reduces the diacetic acid and the acetone in the urine, and although so much starch is contained in the oatmeal the sugar also may be lessened.

British patients do not enjoy extraordinary changes in the diet so much as Continental ones appear to do, and I have usually applied this treatment in a modified form. The essential feature is to allow no other carbohydrate on the oatmeal days. The rotation of diets may be repeated, the patient returning to his former ordinary restricted diet when the "cure" is over. Diarrhœa may occur and should be controlled with laudanum—œdema is also reported.

EXERCISE AND OTHER MATTERS.

I have already referred to the well-known fact that the circumstances of the patient have a marked effect upon the progress of the disease. Always advise a patient to avoid over-work and, so far as possible, worry, and excessive fatigue, but do not advise him to give up his occupation unless it involves much travelling. Change of all kinds is bad for diabetics. Even the confinement to bed of severe cases when taken into hospital may bring on diabetic coma, as was first pointed out to me by the former sister of the William King ward. I have had the misfortune to see the observation verified since, so that I now never have patients who have been up and about before admission kept in bed the whole day. In private practice you will often find it wise to restrict the activities of the patient, but do not radically alter them. In milder cases the same directions apply, though with less force. Those who are able to choose where they live and what they do should be in the open air as much as possible and have some continuous, though not exacting, occupation or interest. Meals should be regular.

You must find out in the individual patient whether exercise does good or harm. In many cases moderate exercise, such as riding on horseback, cycling, rowing, or walking, is beneficial, improving the appetite and leading to a reduction in the excretion of sugar. In the patients of a severer type, on the other hand, much exertion may do harm. Over-exertion or exposure is harmful in all and may be dangerous.

DIABETIC COMA.

I must say a few words in the short time remaining about diabetic coma. The marked feature of diabetic coma—namely, air hunger—exists for some days before coma itself becomes developed. In all severe cases of diabetes not doing well you should, therefore, examine the exposed chest to see if the expansion is greater than normal. If it is, increase the dosage of bicarbonate of soda to 3 drachms every two hours and allow carbohydrate to be taken freely in some easily assimilable form, such as potato soup made with milk, or oatmeal gruel. You must not attempt to give ordinary "diabetic" or protein foods. The bowels must be well opened by enema, followed by castor oil or a mercury pill, and the patient kept warm. If coma supervenes inject three pints of a 2 per cent. solution of bicarbonate of soda into a vein. Although recovery is very rare, several cases have now been reported in which early recognition of the condition and immediate treatment have led to recovery from coma, and even to the restoration of the patient to his occupation. I have seen such myself. The matter of importance is to recognise the symptoms which precede coma. These are constipation, nausea, loss of appetite, pain in the abdomen, expansile breathing, and drowsiness. When you are not called to the patient until the coma is fully developed, you may usually restore consciousness for a time by the intravenous injection of three pints of bicarbonate of soda solution or of saline solution. I have known such a temporary return to consciousness to be of great value in enabling the patient to give directions as to his affairs.

COMPLICATIONS.

I cannot discuss to-day the treatment of the complications of diabetes. The commoner ones, such as boils, carbuncles, eczema, neuralgia, and sciatica, are usually relieved under dietetic treatment combined with such other measures as are suitable to the particular condition. Retinitis also may disappear when the patient is dieted. Constipation must always be corrected. If dry gangrene appears no operation should be done, but the parts should be protected from infection by suitable dressings. Moist gangrene calls for immediate operation, although the risks of anæsthesia are increased in diabetes. Albuminuria is apt to develop in diabetes, but need not call for special treatment unless actual nephritis, as shown by casts or œdema or a very high blood pressure, be present; in that case the diet must contain less protein and more carbohydrate, milk being given in preference to other protein foods.

In conclusion, gentlemen, it must be admitted that the proper treatment of diabetes will make great demands upon your time and patience. In well-marked cases in the young the task is too often a disappointing one, for the disease, though it may be held back by your efforts, progresses. On the other hand, in the majority of patients who pass out dextrose in the urine and who seek advice in good time, you may expect to be able to give such instructions as may in many cases entirely restore efficiency and in others so regulate the life of the patient that he may continue to enjoy both work and leisure in complete relief from the symptoms which led him to consult you, and with full maintenance of nutrition.

TWO CASES OF SARCOMA OF THE THYMUS.[1]

BY WILLIAM SHEEN, M.S. LOND., F.R.C.S ENG.,
SURGEON, CARDIFF INFIRMARY; CONSULTING SURGEON, SEAMEN'S HOSPITAL, CARDIFF;

CORNELIUS A. GRIFFITHS, F.R.C.S ENG.,
ASSISTANT SURGEON, CARDIFF INFIRMARY; CONSULTING SURGEON, PORTH COTTAGE HOSPITAL;

AND

H. A. SCHÖLBERG, M.B. LOND., D.P.H. CAMB.,
SENIOR PATHOLOGIST, CARDIFF INFIRMARY.

THESE are two cases of primary sarcoma of the thymus occurring in young males, in both of which the chief symptom that caused the patients to seek medical treatment was due to tracheal obstruction. In one, aged 7 years, relief was afforded by opening the superior mediastinum; in the second, aged 18 years, the conditions were more unfavourable, and the patient died soon after being seen.

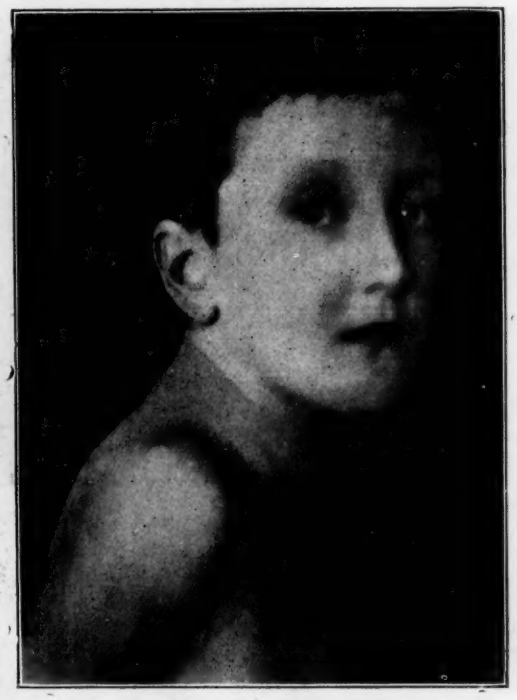
CASE 1. (W. S.)—The patient, a male, aged 7 years, was seen at midnight on Feb. 12th, 1908, in consultation with Dr. T. Anstey-Chave of Cardiff because of threatening suffocation. Fulness of the neck had been noted for a month and dilatation of the veins of the chest for four days. The boy was much as usual, however, until Feb. 10th, when a slight degree of tracheal stridor was noted. This passed off, and on the 12th the child was playing about in comfort, and the parents did not recognise that the boy had any difficulty in breathing until just before midnight, when the symptoms were so urgent that they sent for Dr. Anstey-Chave.

On examination the boy had rapid breathing, stridor, and a constant short cough. There was a general fulness of the neck, most marked in the suprasternal notch; the veins of the neck and temples were enlarged and prominent, and the face was slightly livid. The upper part of the sternum was quite dull on percussion. There was a systolic aortic murmur. Discrete, slightly enlarged glands could be felt in the posterior triangles and in the groins. The spleen was slightly enlarged. The arms were not swollen and showed no enlarged veins. The lungs were normal. The boy breathed most easily in a nearly prone position with the left side lowermost, and in this position the cough was less. Pulse-rate, 100; temperature normal.

It was decided that the dyspnœa was due to intra-thoracic obstruction and that immediate interference was not necessary. The boy was moved into a nursing-home that night and kept under observation for some days, his condition showing little alteration. The severity of the dyspnœa varied, the boy sometimes breathing quite easily. On Feb. 22nd Dr. D. R. Paterson examined the trachea with Killian's tube under an anæsthetic (C.E. mixture), which was taken with little difficulty. The trachea was found compressed antero-posteriorly 7–8 rings down.

On March 1st an operation was performed, Dr. Anstey-Chavé giving the anæsthetic and Dr. R. Walker assisting. An incision was made in the middle line from the cricoid to about half-way down the sternum. By dissecting between and dividing very large anastomosing superficial veins and by separating the muscles a hard growth was found projecting above the suprasternal notch; the supraclavicular glands on both sides were enlarged and hard. The manubrium was divided vertically in the middle line, separated transversely from the body of the sternum, and the two halves held apart by strong retractors. Further dissection exposed a hard, irregular tumour which extended beyond the area opened up. The whole process was most difficult and tedious because of the very large veins encountered and because the patient frequently stopped breathing and had to be turned over on to his face before respiration was re-established. The trachea was exposed and the pressure on it relieved by divaricating the lobular portions of the tumour, and removing fragments which lay immediately near the middle line and directly over the trachea. The vascularity of the growth was slight, and therefore allowed this process of *morcellement* to be carried out readily. The two halves of the manubrium were left separated, and the wound was closed with drainage. As a result of this operation the difficulty of breathing was at once and permanently removed.

FIG. 1.



CASE 1.—Reproduction of photograph of the patient.

For two days the patient was in a critical condition, suffering from constant vomiting and showing extreme cardiac weakness. He gradually improved and left the nursing home on March 25th; he then had a good appetite, but was getting thinner. Subsequently there was a progressive failure of health, with signs of secondary involvement of the lungs, liver, spleen, and glands. The difficulty of breathing never returned, the growth extending forwards between the separated halves of the manubrium sterni. The boy died on May 10th, and a necropsy was carried out on May 12th. The photograph shows the scar, and the growth projecting forward through the divided manubrium (Fig. 1).

CASE 2 (C. A. G.).—The patient, a Swiss, aged 18 years, was admitted to the Cardiff Infirmary on Jan. 21st, 1910. Three weeks before admission he noticed a lump on the right side of the neck, which had since grown larger and had been associated with some difficulty in breathing. The dyspnœa was at first in attacks. The patient continued his occupation until three days before admission, when he was seized with a severe attack of dyspnœa while playing hockey. Since then the dyspnœa had been severe and almost continuous. On examination there were well-marked dyspnœa and orthopnœa; the patient breathed with his mouth wide open, and the accessory muscles of respiration were actively working. He was much cyanosed; the tongue and mouth were very dry. There was a diffuse swelling on the right side of the neck reaching from the suprasternal notch to the thyroid; it was hard, and did not pulsate or move on deglutition. There was dulness over and for about 2 centimetres on each side of the sternum, as far down as the fifth rib. The veins of the chest and upper part of the abdomen were enlarged.

Operation was carried out on admission. Under local anæsthesia a horizontal incision was made over the swelling, and the deep cervical fascia was incised. A large vein was cut and bled considerably. The skin incision was closed, and hot fomentations were applied. On the two following

[1] The first of these cases was communicated to the Cardiff Medical Society on Jan. 19th, 1909.

days the patient's breathing was easier and the cyanosis less. On Jan. 24th the patient was much worse and very cyanosed; he was sitting up in bed and breathing with the mouth wide open. The lower intercostal spaces were retracted. Tracheotomy was performed, and a small rubber tube passed with difficulty down the trachea to its bifurcation. A growth was noted spreading across the trachea. There was some relief, but the patient died half an hour later.

Pathological Report (H.A.S.).

Necropsy.

CASE 1.—A somewhat emaciated, well-developed male child. The operation wound was represented by a linear median vertical scar 7 cm. in length, situated over a hard oval-shaped tumour that hid the sternum from view. The mass projected 3·8 cm. beyond the surface of the bone, and had a maximum transverse diameter of 10 cm.

An exposure of the structures in the neck and thorax showed that the tumour presenting anteriorly infiltrated or enclosed the normal contents of the whole mediastinum, and extended up into the neck, invading the right lobe of the thyroid, and the sterno-mastoid and sterno-laryngeal muscles on both sides as well as the adjacent cervical glands. The main portion of the growth occupied the middle mediastinum and was pyriform in shape. It spread over and infiltrated the pericardium, the apex being attached to the upper surface of the diaphragm. Fig. 2 shows a side view of the growth in the neck and thorax.

Trachea and lungs.—The lumen of the trachea was narrowed along its whole course by the growth, which above lay over and below completely surrounded this structure. The cartilaginous rings just above the bifurcation were infiltrated by the sarcomatous tissue, the infiltration extending downwards along the trachea and bronchi into the substance of both lungs. Both lungs contained scattered nodules of growth. On the left side the obstruction of entry of air into the lower lobe of the lung was complete and had produced a pneumonic condition; only the upper lobe was left functional. On the right side, although the air entry was restricted, the lung was normal throughout except for the nodules of growth already mentioned. The glands at the bifurcation of the trachea were replaced by, and continuous with, the main mass of the tumour. The pleural surfaces of both lungs were studded with growths varying in size from a pea to a walnut.

Heart and great vessels.—The mass of growth lying over the pericardium and heart had a rounded apex like the ventricle. The infiltrated and much thickened pericardial sac contained a quantity of clear serous fluid, and the internal surface was of a dull white colour. The visceral pericardium showed two large plaques of growth which had penetrated the cardiac muscle: one situated at the apex of the right ventricle had a maximum diameter of 2 cm.; the other, 7·5 cm. long by 1-1·5 cm. broad, extended from near the apex to the base of the left ventricle. All the great vessels entering and leaving the heart were embedded in growth, but although the walls of the vessels were infiltrated their calibre was but slightly diminished.

Œsophagus.—This in the neck was normal, but in the thorax from just above the bifurcation of the trachea it was compressed and surrounded by growth down to the cardiac origin of the stomach. At this point the growth infiltrated the walls of the œsophagus, the diaphragm and the adjacent lung substance, fixing these structures firmly to each other.

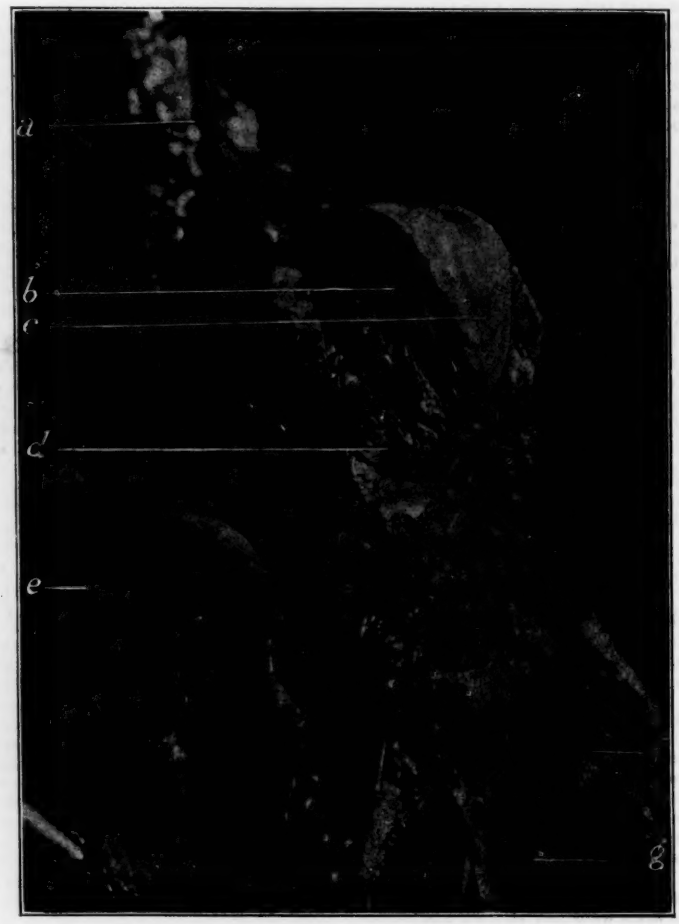
Abdomen.—The metastases present included secondary nodules in the liver and kidneys, and in the lymphatic glands in the neighbourhood of the cœliac axis. The liver showed in addition a few small areas of congenital cyst formation (the spleen and kidneys, however, being normal in this respect). There was no ascites.

CASE 2.—Well-nourished, muscular subject. The structures of the neck and thorax were exposed in the usual way. The tracheotomy wound had divided the cricoid and the first two rings of the trachea. A massive nodular growth was found, which extended from the level of the lower border of the thyroid cartilage above into the thorax, filled the superior thoracic opening, and hid the great vessels and heart from view and pushed the lungs on one side.

Neck.—The growth, while occupying the anterior and posterior triangles on both sides of the neck, was larger and extended further upwards on the right than on the left side. The lower pole of the right lobe of the thyroid was infiltrated, and the great vessels of the neck on both sides were surrounded and infiltrated by growth. The sterno-mastoid and sterno-laryngeal muscles were firmly blended with the tumour.

Trachea and lungs.—The trachea was compressed from before backwards along its whole course, the lumen of this tube and of the bronchi being narrowed right up to the entrance of the latter into the lungs. The walls of the trachea and bronchi were but slightly infiltrated, the growth chiefly enclosing these structures all the way from above where it hung over the tracheotomy wound down to the roots of the lungs. The glands at the bifurcation of the trachea were much enlarged and replaced by malignant growth. The lungs were normal and showed no metastatic nodules.

FIG. 2.



CASE 1.—Reproduction of photograph showing (*a*) the growth on the right side of the neck; (*b*) the mass which has grown through the divided sternum; (*c*) the skin and scar; (*d*) a portion of the sternum; (*e*) a metastatic nodule on the surface of the lung; (*f*) the growth infiltrating the pericardium; (*g*) the heart. (Photograph by Dr. O. Ll. Rhys.)

Heart and great vessels.—This organ was enclosed in a smooth hard pyriform mass which had the appearance of a second superimposed heart. The apex of this portion of the tumour was free, while the base blended with the main mass, enclosing the great vessels. The external surface of the pericardium was infiltrated with growth, but in no place had it pierced the wall of the sac, the internal surface of which was smooth and glistening. There was no fluid in the pericardium. The heart showed no metastatic growths.

Abdomen.—This was normal. There was no ascites, nor were there any metastatic growths or naked-eye evidence of any congenital abnormality.

Anatomy of the Growths.

CASES 1 AND 2.—The *naked-eye* appearances of the main masses in the thorax and neck were identical; in both they occupied the same position and possessed in the chest the same lobate contour and hard smooth surface. A median section showed the same characters—namely, a firm, uniformly solid, avascular growth without any areas of softening or cyst formation. Both extended in a similar way up into the neck, following the line of the position of the thymus. The most striking difference between the two cases was that in one, the younger patient, the sarcomatous growth was disseminated, while in the older patient it remained localised.

The *microscopic* characters of the growths were identical in both, and without reference to the record on the slide it was not possible to distinguish one from the other. The tumours consisted of closely packed, small round cells with a deeply staining, relatively large rounded nucleus and a scanty protoplasmic content. The stroma was very poorly developed, and the blood-vessels were small and very sparsely distributed. The morbid anatomy and microscopic appearances were those of a small round-celled sarcoma. The micro-photographs show from Case 1 the metastatic nodule near the apex of the right ventricle of the heart (Fig. 3) and from Case 2 the infiltration of the vena azygos major by the growth (Fig. 4).[2]

[2] For these micro-photographs we are indebted to Mr. E. Barton White, and for the facilities for producing them to Dr. E. Goodall, medical superintendent of the Cardiff City Mental Hospital.

Commentary.

Clinical.—These two cases are examples of a rare condition. In the first case the bilobate character of the growth as revealed at operation, coupled with microscopic examination of some of the pieces of growth then removed, allowed a

FIG. 3.

CASE 1.—Microscopic section of the metastatic nodule at the apex of the right ventricle. (*a*) Sarcomatous deposit; (*b*), heart muscle. (Photograph by Mr. E. Barton White.)

probable diagnosis of sarcoma of the thymus to be made during life. Both cases were in young males and showed an acute onset; dyspnœa, at first in attacks; dilated veins of the neck and thorax, swelling of the lower part

FIG. 4.

CASE 2.—Microscopic section of a portion of the vena azygos major. (*a*) Sarcomatous growth extending right up to (*b*) the endothelial lining. (Photograph by Mr. E. Barton White.)

of the neck, and dulness over the manubrium. Direct laryngoscopic examination was of value in determining the site of the obstruction. Division of the manubrium sterni and the removal of portions of growth pressing on the trachea permanently relieved dyspnœa. The clinical conditions unfortunately seem to show that there is little hope of ever getting a case so early that the growth can be entirely removed.

Pathological.—That these two cases were sarcomata arising primarily in the thymus is suggested by the fact that the main mass of the growth in the chest occupied the situation and had the shape of the thymus. The character of the growth in the neck likewise supported this interpretation, for both cases showed an asymmetric distribution in which the chief bulk of the tumour was on the right side in the position occupied by the thymus when it is found in the cervical region. The microscopic characters, too, were consonant with a sarcoma arising in the lymphoid tissue of the thymus, and the malignant nature was established by the destructive infiltration of the surrounding structures and the distant metastases.

THE OPERATIVE TREATMENT OF BADLY UNITED FRACTURES.

BY W. ARBUTHNOT LANE, M.S. LOND., F.R.C.S. ENG.,
SURGEON TO GUY'S HOSPITAL; SENIOR SURGEON TO THE HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET.

PERHAPS no operation in surgery may make a greater demand on the skill, resources, and ingenuity of the surgeon than that requisite to restore a badly united, useless bone to its normal form and functions. If an operation is resorted to at the time the injury is sustained the difficulties which the operator has to meet are relatively small, however great the comminution, since the fragments can be fitted accurately together and retained in position by plates and screws, if only the surgeon has enough patience and experience.

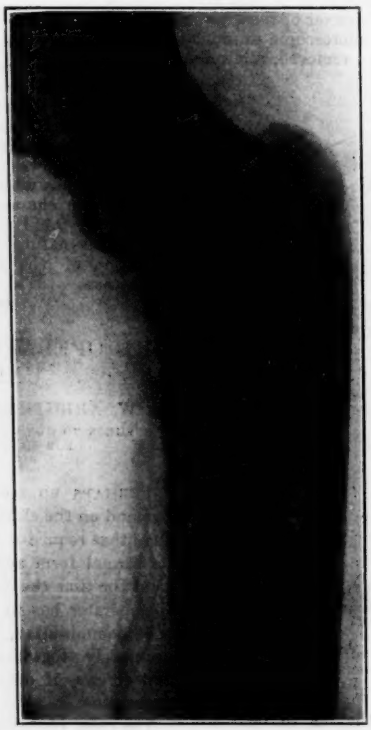
The chief obstacle that has to be overcome in many cases is the approximation of the edges of the skin incision and their retention in accurate apposition. This difficulty is experienced more commonly in fractures about or above the ankle-joint, but it may be met with in many fractures where there is much laceration of the soft parts, and especially when some time has been permitted to lapse since the receipt of the injury and the tissues have become inflamed. The earlier the operation is performed after the receipt of the injury the easier it is to carry it out effectually and rapidly. Michel's clips form the most effectual means I know for retaining the skin edges in accurate and efficient apposition. If accurate apposition is not established the wound may become fouled and the plates may come out. Such an accident means disaster to the patient. At the best it entails delayed union and probably some necrosis. In consequence of the softening of the bone in order to eliminate the screws, non-union of fragments is likely to occur. Again, such non-union is difficult to deal with by operative means, since the organisms which get into the wound lie quiescent for a very long time in and about the bone, and only become active when a plate and screws are introduced. The length of time these organisms will remain quiescent is remarkable and most disappointing to the surgeon who attempts to deal with a case that has once been fouled.

Surgeons are learning by painful experience that they cannot fix fragments in fractures by foreign bodies with the casual amount of asepsis they find sufficient for abdominal and other operations. Personally I believe that for some time the results that will be obtained by operation on simple fractures will at least be as hopelessly unsatisfactory as are those following non-operative treatment. Indeed, some surgeons seem to regard as normal the necessary removal of screws and plates by a process of suppuration, and are inclined to consider the infection as resulting from the presence of organisms in the blood rather than from their own insufficient precautions. This trouble will gradually be eliminated by increased experience.

I think it worth while to illustrate some of the difficulties one may meet by the consideration of two typical cases of badly united fractures. One represents a badly comminuted fracture of the femur which was operated on five months after the bone had been broken, and the other multiple

fractures of the tibia and fibula operated on 12 weeks after the injury. Both cases had been under the care of very eminent surgeons, and in neither, apart from operation, was there the slightest prospect of restoring the patient to active usefulness. Both cases are illustrated by radiograms taken at intervals. They are of particular interest since they show the manner in which callus serves to render secure the junction of a broken and deformed bone in which it has been impossible to obtain any large area of bone apposition without shortening the limb very materially and so reducing its usefulness and the symmetry of the individual in a corresponding degree. They also show that the crystallisation of lines of force, which I showed to be a striking feature in the fractures of young life, takes place progressively in a marked manner later in life and for a long period after the union of the fractured ends has been effected. This entails the careful retention of the leg for a considerable time in an apparatus by means of which the weight of the body is transmitted from the tuberosity of the ischium to the boot. Such an apparatus enables the patient to get about at an early stage of convalescence, while the gorging of the limb with blood consequent upon the dependent position of the leg during locomotion assists very materially in the formation of callus. Great care should be taken to encourage this engorgement within reasonable limits and to avoid any direct pressure on the seat of fracture which is likely to reduce its blood-supply. Such a splint was made for me in both these cases by Mr. C. A. Hoefftcke, and it served its purpose perfectly.

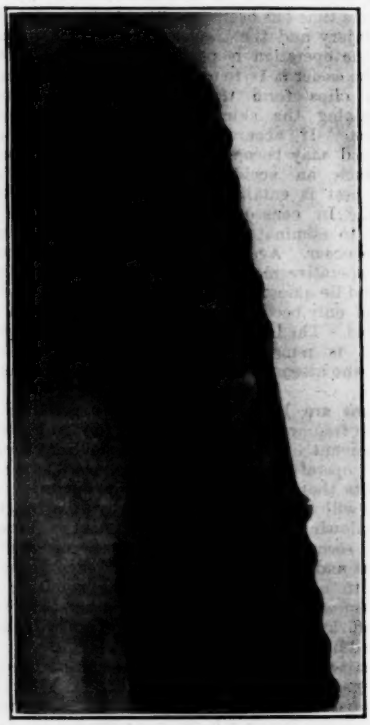
FIG. 1.



CASE 1.—Skiagram taken July 4th, 1910, showing condition of femur before operation.

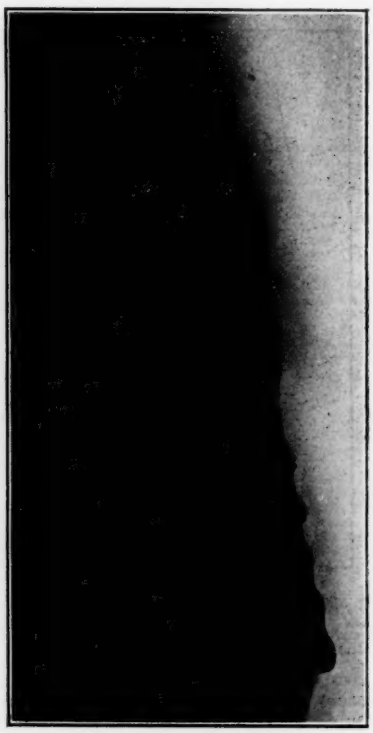
The first case was that of a man, aged 46 years. On Feb. 1st, 1910, he fell in an aeroplane accident and sustained a very severe comminuted fracture of the upper part of the shaft of the right femur. Everything that was possible was done by means of splints, &c., but he was left with a useless and deformed limb. Fig. 1 shows the condition of the bone when he came under my care five months after the receipt of the injury. It is apparent from an examination of the radiogram that the junction was unsatisfactory in the extreme. The comminuted fragments were united by callus at a very bad angle, the union being scanty and imperfect. It also shows that, owing to the splitting of the shaft vertically and to the comminution of the fragments, in order to restore the limb to anything approaching its normal length only a portion of the segment of each bone could be employed to effect a junction, and that some delay must necessarily take place before the interval that would remain between the broken spikes could be filled in with new bone in sufficient quantity to make the femur perfectly secure functionally. On July 13th, 1910, the operation was performed. As was expected, it was only possible to utilise the blunt end and side of a spike of the lower fragment, which was placed in contact with a similar spike and blunt surface on the upper fragment. In this manner the length of the shaft was reduced

FIG. 2.



CASE 1.—Skiagram taken August 22nd, 1910, showing early results of operation

FIG. 3.



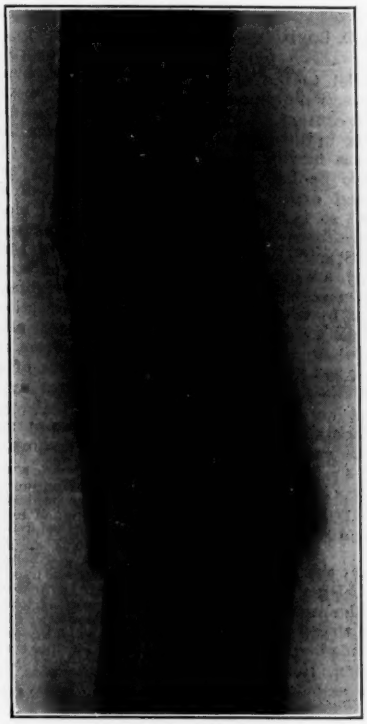
CASE 1.—Skiagram taken May 25th, 1911, showing firm bony union.

by only half an inch. A very stout steel plate, secured by means of eight No. 7 screws, three quarters of an inch in length and threaded up to the head, was placed in position so as to retain the fragments immoveably and firmly together. Fortunately the bone was very dense and strong. The patient made an uninterrupted recovery. On Sept. 13th Mr. Hoefftcke fitted him with his splint and the patient gradually got about with increasing comfort and facility. He was finally able to discard the splint after wearing it for some months. He now gets about easily and leads a very active life. Figs. 2 and 3 show the condition of the bone at intervals. Fig. 2 was taken in August, 1910, a little more than one month after the operation, and Fig. 3 in May, 1911, nine months later. They speak for themselves and hardly need any description. The amount of callus which was formed, and filled in the interval which existed between the fragments after the operation, has increased considerably and now exists in sufficient quantity to render the bone perfectly strong and efficient.

The second case was that of a powerfully built man, aged 56 years, under the care of Dr. Henry Menzies. He had sustained a severe comminuted fracture of the left tibia and fibula in December, 1910. The fractures were produced by direct injury, and there was much damage to the soft parts. The tibia and fibula were each broken in two parts, so that there were six separate large fragments of bone. Besides these there were several smaller pieces. The fragments had been so displaced that their several axes differed very greatly in direction and there was much overlapping, so that at none of the four fractures was there anything approaching apposition of the broken parts. The imperfect junctions between the tibial fragments were cleared, and their opposing surfaces were sawn so as to enable us to restore the bone to its original form; the cut surfaces were placed and secured in accurate apposition. To retain the fragments in position it was necessary to use six steel plates of varying sizes and strengths. No attempt was made to unite the fibular fragments. This would have increased the risks of the operation very much, while it would have afforded no sufficient compensation, as the fibular fragments would unite as soon as the tibia was functionally secure. As in the first case, the successful result was chiefly due to the skill and care of my assistants—most important factors in the performance of these operations. The patient made an uninterrupted recovery. Mr. Hoefftcke fitted a splint on May 8th, 1911, and the patient soon learnt to use it. Figs. 5 and 6 show the condition of the bone at intervals of five and seven months after the injury. The amount of new bone that continued to form even after the fragments of the tibia had apparently become firmly united was considerable. Fig. 6 showed that union is perfect between all the fragments of the tibia and fibula. The radiograms illustrated by Figs. 4 and 5 were taken by Mr. A. H. Greg, the others by Mr. W. A. Coldwell.

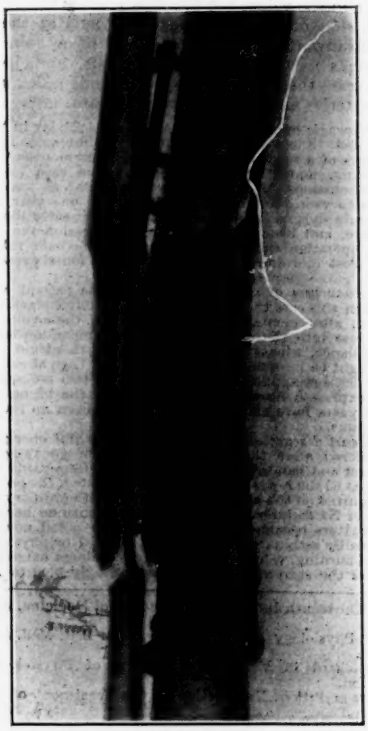
Cavendish-square, W.

FIG. 4.



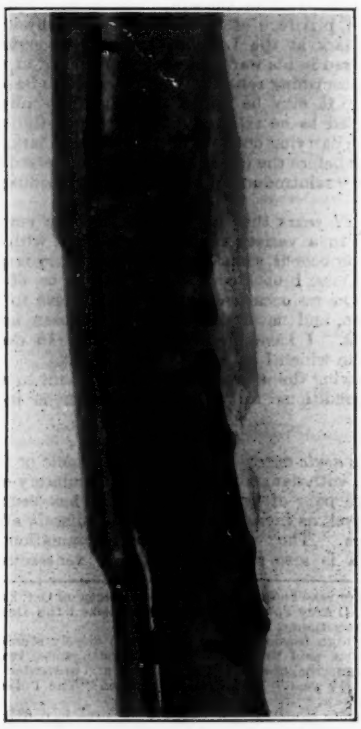
CASE 2.—Skiagram taken Feb. 5th, 1911, showing condition of tibia and fibula before operation.

FIG. 5.



CASE 2.—Skiagram taken April 26th, 1911, showing reposition of parts after operation.

FIG. 6.



CASE 2.—Skiagram taken Sept. 11th, 1911, showing results of operation.

CASES ILLUSTRATING THE USE OF VENESECTION.[1]

BY R. FORTESCUE FOX, M.D. LOND.

IT would be difficult to find a parallel to the sudden revolution in treatment under which venesection disappeared from medical practice in the middle of last century.[2] Action and reaction are equal and opposite, even in the domain of opinion and custom, and no doubt it was inevitable that after ages of unquestioning and excessive depletion there should follow a period of scepticism and expectancy in treatment. But why did the tide go out so fast? At all events, in that ebb we trust there have been laid the foundations of scientific therapeutics. Specific methods, such as vaccine-therapy and organo-therapy, are being found for acute and specific diseases. The more complicated problems of chronic disease are being met by various forms of physical therapeutics, which bring the organism into effectual contact with the energies—whether thermal, electrical, chemical, radio-active or otherwise—by which we are surrounded.

Similarly I would venture to submit that increasing knowledge has shown us that there are both acute and chronic conditions of toxæmia, and disorders of the vascular system and of the distribution and pressure of the blood, in the treatment of which venesection has its proper and essential place. Both clinical experience and *a priori* reasoning have shown that no other treatment can here produce the same immediate and beneficial effects.

During the latter half of the last century there have been many authoritative voices to warn us that this potent method of treatment was too much neglected by the profession, and that lives could be saved by venesection that would otherwise be lost.[3] In this country Paget, Broadbent, Hughes Bennett, Heywood Smith, B. W. Richardson, H. G. Sutton, Hale White, Wilks, and Newton Pitt are among those who have advocated its employment. The test of practical experience has, moreover, not been wanting. Few years have passed in which there may not be found in the medical journals records of the use of venesection in various emergencies, and of the good results obtained even in apparently hopeless cases.

My own interest in the subject dates from the time when I had the privilege of serving as house physician to Sir Andrew Clark at the London Hospital. A series of cases then occurred in his wards in which a recourse to venesection brought astonishing relief in what seemed to be a desperate condition. It may be added that the house physician was himself glad to be relieved of the responsibility he had incurred in carrying out this measure when Clark, discussing the matter before the class, handsomely expressed his thanks to him for "reintroducing the practice of bleeding into these wards."

In the 27 years that have elapsed I have employed this treatment in a variety of conditions, often with immediate and striking benefit, sometimes with temporary improvement, and sometimes, I must confess, too late to be of any signal service. On no occasion have I found cause to regret the venesection, and never has any ill effect been noticed as a result of it. I have preserved records of 18 cases and 28 occasions in which I have had recourse to it.

In reviewing the whole it seems convenient to arrange the morbid conditions in which venesection is indicated as follows.

A. *Acute Cases.*

1. Some *acute pyrexial diseases* of a sthenic or fulminating character, with dangerous nervous or circulatory excitement. The severe pain of very acute pleurisy has been found by others as well as myself to subside immediately after a small venesection. The violence of the inflammation in sthenic pneumonia is also relieved by timely venesection.[4] It is indeed remarkable how rapidly the nervous and circulatory tension are relieved.

The so-called "physiological effects of venesection" give but a very imperfect idea of the effects produced by a small loss of blood in pyrexia and toxæmia.[5] According to A. Robin, it exerts an immediate action on nutrition and the organic exchanges; it increases pulmonary ventilation and oxidation, and is therefore indicated where nutrition is compromised by an insufficiency of oxygen.[6]

Recent observations also suggest that the natural power of resisting infective disease may be substantially increased by venesection. In certain circumstances bloodletting increases the production of antitoxins. Schröder of Copenhagen, by means of small bleedings of patients with enteric and paratyphoid fever, brought about a rapid increase of the agglutinative power of their serum. The immunity of animals to bacillus coli or bacillus typhosus may be in the same way restored or heightened. It is probable that the beneficial effects of venesection in acute disorders can be, therefore, to a great extent attributed to a similar augmentation of immunity.[7] From this point of view it is interesting to note that many cases of pulmonary tuberculosis in which hæmorrhages occur at an early stage very often run a favourable course.

2. *Toxæmias*, uræmic or otherwise, resulting in sudden attacks of dyspnœa, coma, or convulsions.

CASE 1.—A man, aged 50, with chronic Bright's disease and nearly blind from albuminuric retinitis, became suddenly comatose on April 1st, after headache and vomiting. Blood pressure was high, the left ventricle much hypertrophied. After bleeding to 6 oz. the attack rapidly passed. The second seizure on April 30th yielded promptly to venesection to 12 oz. He died from bronchitis on June 24th.

CASE 2.—A girl, aged 22, with cirrhosis and endocarditis. I was called to find her unconscious with epileptiform convulsions affecting the left hand, with deflection of the head and eyes to the left. The circulation was excited, the pulse 150, of a peculiar thrilling or purring character. Pulsation was also present in the veins on the dorsa of the hands, and the twitchings synchronised with the beat of the heart. I bled to 6 oz. with immediate relief.

Many observers have noted beneficial effects from venesection in uræmic seizures and puerperal eclampsia. "In no other way can one so quickly terminate the uræmic convulsions or cause the disappearance of uræmic coma."[8]

3. *Threatening asphyxia* and cyanosis, or dangerous circulatory embarrassment in heart disease, thoracic aneurysm, bronchitis, carbonic acid poisoning, &c. In this condition it would seem that not only does the blood accumulate in the veins, but that the arteries are contracted. The right side of the heart therefore acts at the greatest possible disadvantage. The opening of a vein in such circumstances naturally relieves cyanosis, and, judging by its effect upon the pulse, it appears in some reflex manner to relax the arteries and lower arterial pressure.

CASE 3. *Thoracic aneurysm.*[9]—A woman, aged 29, lay in the London Hospital in 1884. She was married, without children, one miscarriage, and had signs of a mediastinal tumour. For six months she had had cough, wasting, and attacks of dyspnœa. The case led to many diagnostic discussions. By most it was regarded as malignant, by myself as aneurysm. She continued for nearly one year, frequently seized by acute dyspnœa. At such times I frequently bled to 4 oz., 6 oz., or more, and have noted that on one occasion the pulse sank during the operation from 138 to 108 with immediate relief to the breathing. Post mortem a large aneurysm was found pressing on the trachea.

CASE 4. *Aneurysm of subclavian artery.*—The patient was also a woman, but in this case the dilatation was probably congenital. At 34 years of age, after mental and physical strain, the swelling became larger and rose into the neck with increased pulsation and distress. Mr. C. A. Ballance, who saw the case with me at this time, feared that a rupture might be imminent. The patient had been already confined to bed and icebags applied. She was now on two occasions bled to 10 oz., and expressed herself as delighted with the immediate relief. Nearly two years have elapsed, and there has been no return of the acute symptoms.

CASE 5. *Heart disease.*—A woman of great mental energy, but full-blooded, suffered after the change of life from gouty symptoms—"burning feet and hands," inactive skin, anginiform pains and winter bronchitis. At 60 the heart was found slightly dilated, the pulse 114, and dyspnœa occurred on the slightest exertion. With ordinary treatment and the use of Nauheim baths she managed to continue her active life, but at 64 matters became worse. There were noted now, frequent attacks of cardiac asthma on the slightest mental or physical fatigue, skin dry and burning, veins over-full, heart's dulness extending to the right edge of the sternum. She was accordingly bled to 14 oz., and

[1] A paper read before the Hunterian Society on Oct. 25th, 1911.

[2] See Mr. D'Arcy Power on "Marshall Hall and the Decay of Bloodletting," Practitioner, 1909.

[3] "Were high tension in the pulse more closely studied, and were less attention paid to the public prejudice against venesection, it (cerebral hæmorrhage) would be anticipated and prevented in hundreds of cases every year." W. H. Broadbent on "The Pulse," Croonian Lecture, March, 1887.

[4] See Hughes Bennett, THE LANCET, 1869, vol. i., p. 603; J. W. Ogle, 1891, vol. i., p. 1029; Hale White, Clinical Journal, March 31st, 1909.

[5] Hayem: Thirteenth International Congress of Medicine, Paris, 1900.

[6] A. Robin: Ibid.

[7] See the Physiology of Bloodletting, edit. Brit. Med. Jour., 1910, vol. i., p. 104.

[8] F. A. Packard in Venesection, System of Physiologic Therapeutics, vol. xi.

[9] See Newton Pitt on Venesection in the Treatment of Symptoms arising from Thoracic Aneurysm, Hunterian Society's Transactions, 1893-4.

after the operation returned home in a cab rather faint. The relief to respiration was marked, and the attacks did not return for four months. A year later she died from general cardiac failure.

Such cases presenting painful circulatory embarrassment, which ordinary remedies have failed to relieve, cannot be uncommon. But in this, as in other instances, it was impossible not to regret that one did not resort to venesection sooner, so great was the benefit obtained from it, even at a late stage. A remarkable example of the restoration of the circulation by means of timely venesection in a case of gunshot wound of the chest with hæmothorax has been recorded by Captain F. J. W. Porter, R.A.M.C.[10]

4. *Cerebral hæmorrhage, actual or threatened.*—How many lives in the full exercise of mental if not physical power are terminated by this accident. How many brain-workers, physicians and statesmen, have died at a little over 60 years of age from the sudden paralysis induced by the pressure of blood upon the brain! In some families the fatal liability belongs almost to a particular year. We shall presently consider to what extent this liability may be overcome and accidents prevented. The following cases, like others that have been published,[11] show that life may be saved by venesection even when there is reason to believe that hæmorrhage has taken place. There is no condition in which venesection is more appropriate than an apoplectic seizure in cases of chronic arterial hyperpiesis. It is difficult for those who have not witnessed its effect to credit the rapid fall in blood pressure and the restoration of tranquillity to the circulation and nervous system that often ensue.

CASE 6.—A patient, nearly 70 years of age, stout and plethoric, suffering from indigestion, shortness of breath, and discomfort in her head, went to a certain sulphur spa and drank the waters without advice. The congestive symptoms were dangerously increased, and one afternoon, whilst sitting on the sofa, she suddenly lost her speech, became confused, dropped the book she was reading, fell back, and became unconscious. I saw her a few minutes later and found the unconsciousness deepening into profound coma. The face was purple, the pupils fixed and dilated, the limbs moved convulsively at intervals, and the right cheek flapped in respiration. I bled her immediately from the left arm. The force with which the stream came was extraordinary. Presently the convulsive movements ceased, and the pulse, which had been very excited, sank in frequency and force. Believing that no half measures could suffice to check the hæmorrhage probably taking place in the brain, I determined to go on almost as long as the blood would flow. In the end I took 35 oz. In eight hours she regained consciousness, and on recovery declared that she was better than she had been for years. Her right leg and arm were weak for some months afterwards and she was liable to confusion of speech and some want of memory for words when taxed with conversation. For several years afterwards, leading a guarded life, she remained quite well.

CASE 7.—With regard to this patient several members of her family on either side had died from apoplexy at from 60 to 65 years of age. Since the climacteric at 50 she had suffered from high tension and occasional tachycardia and gouty symptoms. At 54 she had hæmorrhage into the retina, and epistaxis occurred on several occasions during the following years. At 59 she was very unwell and restless; the blood pressure was found to be 190, the heart was dilated and hypertrophied with a ringing second sound, and the patient especially complained of liability to "congestion of the head" and pulsation. This condition was in a measure relieved by absolute rest, abstinence from meats, and the use of nitrites and calomel. The seizure occurred at 61 years of age. It came on with difficulty of speech, and consciousness was not entirely lost for two hours. I saw her 30 hours afterwards in consultation with Mr. E. A. Bullmore of Wisbech. She was profoundly unconscious, the heart labouring. After bleeding to 14 oz. the pulse fell from 114 to 90. The next day the patient recognised her children and raised her right arm, but died with œdema of the lungs three days after the onset.

In connexion with cerebral hæmorrhage it is interesting to recall that venesection has been successfully employed in cases of fractured base with hæmorrhage.[12]

B. *Certain Chronic Disorders with Habitual High Arterial Tension.*

Many of the emergencies for the relief of which venesection may be properly employed occur in persons who suffer from chronic arterial hypertension. It is now an easy matter by instruments of precision to measure and record variations of blood tension with far more exactitude than when the *tactus eruditus* of the physician was his sole guide. Increased tension constitutes one of the commonest of chronic disorders, even at a comparatively early age, and it is associated with many of the more serious maladies of middle and later life. It is unfortunately subject to progressive increase and to sudden and dangerous exacerbations. The most effectual treatment of hypertension must therefore be by way of prevention, and it is as a preventive treatment in many cases that periodical venesection plays an important part. We know that in nephritis a natural relief is frequently obtained by epistaxis, and in cirrhosis by hæmorrhage into the bowel. In a middle-aged man now under my observation a decided improvement in health has followed a smart hæmorrhage from the urethra. The same effect can be seen when the menses are re-established in cases of amenorrhœa. Even in young subjects with chronic ailments, and especially in nephritis, it is probable that, *a fortiori*, where hæmorrhages have occurred or retinal changes or circulatory embarrassment are present, an occasional small venesection would be helpful.

In middle life, especially at or after the climacteric epoch in women, there is often—particularly in persons of gouty family—a marked increase of blood pressure, with a variety of discomforts. Severe and intractable headaches, vertigo, vertical pressure, depression, restlessness and nervous prostration, flushing and burning heat, with præcordial pain and palpitation, swelling of the limbs, fulness of veins, stiffness and pains in the muscles or the joints, are among the symptoms that indicate a condition to which the word plethora used to be applied. Sometimes relief is obtained by profuse perspirations or catarrhs, diarrhœa, or epistaxis.

CASE 8.—A lady, aged 47, of gouty inheritance, who had had rheumatic fever at 29, suffered from a uterine polypus with frequent hæmorrhages. The heart presented a systolic murmur with a highly accentuated second sound. She complained of occasional giddiness and dyspnœa and anginiform pain during the cold winds of winter. At 49 the polypus was removed and the hæmorrhages ceased. There followed a sense of heat, flushing, præcordial pain, depression, restlessness, gouty swellings, and neuritis. Treatment at Aix-les-Bains relieved the high tension, as also in the following year prolonged baths at Loeche-les-Bains (130 hours in the baths). Two years later, in May of the present year, the congestive symptoms having returned, I bled to 12 ounces, with marked relief of all symptoms.

CASE 9.—A patient, stout, sanguine, and energetic, presented herself for spa treatment on account of tender feet and breathlessness on exertion. She came of a gouty family, the catamenia had ceased four years, and she had undergone much strain in nursing a relative. Some relief was obtained from baths. The following year there were attacks of vertigo, heat, and pain in the head, also occasional præcordial pain and accentuation, her condition suggesting the note "post-menopausal congestion, threatening apoplexy." For two years she continued under strict diet, the use of calomel and salines and thyroid extract. Later, subconjunctival hæmorrhages occurred, and the venous system being turgid and the symptoms again threatening, I bled to about 15 oz. The resulting relief was so marked that the patient herself requested a repetition of the same treatment at the hands of another medical man twice in the following year. Four years having elapsed, this lady writes that "the bleeding has done her a great deal of good," and that the vertigo has not returned.

CASE 10.—Three members of this patient's family had died from apoplexy, the father at 62. She had persistent high arterial tension under my own observation for ten years, with occasional præcordial pains and an aortic murmur; also frequent complaints of anxiety, tightness, and breathlessness, and sometimes vertigo and tinnitus. At 66 there was a return of anginiform attacks and increasing blood pressure, for which she resorted with benefit to Royat. The following year the pressure again rose to 155, and later to 170, with a distressing sense of fulness, pressure, and apprehension, "as if she were going to have a stroke." A venesection was done to 10 ounces with great relief. Within two days the pressure fell to 122, and six months later remained at 110 to 115, the general condition being in every way satisfactory.

CASE 11.—This is the case of a friend whom I have advised medically for more than twenty years. At the age of 48, she had every sign of general plethora with vertigo and slight articular symptoms. The latter were regarded as a serious arthritis, but afterwards cleared up. At 54, the catamenia ceased and slight attacks of angina occurred. The arteries were contracted and "hypertonic." At 57, a hæmorrhage from the rectum; at 58, a transient right hemiplegia and aphasia, and an increased liability to vertigo, faintness, and dyspnœa. The skin was dry, inactive, and chilly, but all these symptoms were mitigated in the warm climate of Egypt where she wintered. The next year the heart was more uneasy, markedly hypertrophied, the peripheral vessels everywhere contracted, the head hot and flushed, and the extremities habitually cold. The blood pressure was 160. The late Mr. Marcus Gunn reported that the retinal vessels were small and evidently sclerosed. It was obvious that the irregular distribution of the blood and the inequality of vaso-motor tone imposed increased labour upon the heart and threatened the integrity of the brain. I therefore determined on venesection, and this was repeated generally twice in the year for about six years from 10 to 20 oz., and on one occasion 24 oz. being taken. At the same time the diet was reduced and meats of all kinds avoided. Marked and immediate relief of the symptoms attended every venesection. There has been now up to the present time (age 69) no return of the paralytic symptoms, the health is fairly good, and the pressures range from 140 to 160.

In conclusion, it will be seen that this ancient method of treatment, which so suddenly disappeared from medical practice, has been again employed in a guarded manner and with good results in a variety of cases. The chief indication for venesection has been stated by Dr. R. J. Pye-Smith and others to be "cyanosis with distension of the right heart."[13]

[10] Brit. Med. Jour., 1901, vol. i., p. 954.

[11] See Broadbent: Loc. cit. B. W. Richardson: Medical Times, 1874, vol. ii., p. 397. Stretch Dowse: Brit. Med. Jour., 1879, vol. i., p. 608. R. F. Fox: THE LANCET, 1890, vol. i., p. 723. Wilks: THE LANCET, 1891, vol. i., p. 1139. Russell Forsbrook: THE LANCET, 1892, vol. i., p. 1181. &c.

[12] See Mr. Stephen Paget, Brit. Med. Jour., vol. ii., 1903, p. 190.

[13] Pye-Smith, THE LANCET, 1891, vol. i., p. 252; Hale White, loc. cit.

To this is attributed its beneficial action in mitral disease and in some cases of bronchitis and pneumonia.

No mere mechanical relief to the heart can, however, explain the observed effects. We have seen that venesection in some cases appears to influence in a favourable manner the progress of specific diseases, both acute and chronic, probably by heightening the natural resistance of the tissues; that it helps to restore the balance of the circulation and the normal distribution of the blood by a dilator effect on the arterial system; that a small venesection may have a powerful and apparently disproportionate influence, not only in quieting the circulation, but the nerve centres also. This is witnessed in uræmic coma or convulsions and in the crises of pain and dyspnœa in aneurysm. We have noticed that excessive blood pressures have been more or less permanently reduced by venesections far too small to produce such effects in a direct manner. Such facts as these suggest that the respiratory and vaso-motor centres are concerned in these actions; and that there are, in truth, morbid states of the circulation and the nervous system, both acute and chronic, which are in some unknown manner peculiarly sensitive to a slight reduction in the amount of the circulating blood.

Wimpole-street, W.

THE PREVENTION OF ANTHRAX INFECTION DUE TO IMPORTED HIDES AND SKINS.

(THE SEYMOUR-JONES FORMIC-MERCURY PROCESS.)

BY CONSTANT WELLS PONDER, M.D., D.P.H. CANTAB., M.R.C.S. ENG., L.R.C.P. LOND.,

SECOND STUDENT, JOHN LUCAS WALKER TRUST; BACTERIOLOGIST AT THE LEATHERSELLERS' COMPANY'S TECHNICAL COLLEGE, BERMONDSEY.

WORKMEN who handle imported hides and skins run a certain risk of contracting the dangerous disease set up by the spores of B. anthracis. Though goods from certain countries, such as China and the Straits Settlements, have a bad reputation in this respect, from our knowledge of the conditions under which the disease has been contracted we can scarcely describe as absolutely free from blame those of any particular country. The number of cases reported is not large—roughly, one case occurs annually among every 1600 engaged in tanning, and about 1 in 7000 die from the disease every year, but its dramatic acuteness and high mortality give it an importance not indicated by the actual figures.

Many attempts have been made to find a method suitable for disinfecting hides, but none hitherto suggested has survived the criticism of bacteriological or technical experts; either the process has failed to destroy the spores, coated as they may be by protective albuminoid material, or, on the other hand, it is condemned for its injurious effect on the hide and skin substance.

In this paper I wish to bring before the notice of the profession a method for which it is claimed that effective disinfection is brought about at a reasonable cost without damage to the material. This method is due to the suggestions of Mr. Alfred Seymour-Jones of Wrexham, a practical tanner and leather trades chemist. Before discussing Mr. Seymour-Jones's method, however, it will be as well to consider briefly the manner in which hides and skins convey the infection, the state in which they are imported, and the general conditions under which workmen contract the disease, matters with which I have dealt more fully elsewhere.[1]

I think it extremely probable that in hides and skin, as Dr. Eurich[2] has so plainly demonstrated to be the case in imported wool, the spores occur in their most dangerous form in blood and blood-stained material which has dried on the surface of the fur and skin; it certainly is fair to assume as a hypothesis that spores protected in this way are as resistant to disinfection as any, and if we are able to deal with these effectually there is not much danger from others that are present on the skin under slightly different conditions. In the animal dying from anthrax there is every chance of the skin and fur becoming contaminated with blood-stained discharges, which after drying are liable later on to form an infective dust; there is much evidence to show that spores do not form in the substance of the skin.

When the skin is removed from the animal it may be treated for preservation in several ways; we may divide these roughly into two classes. 1. Methods in which the skin is dried in the air or sun, and in which certain earths or chemical materials may or may not be rubbed in to prevent putrefaction. (The chemical materials in use may be assumed to have no action on the spores of B. anthracis, as infection from skins so treated has often taken place.) These methods may be called "dry-curing." 2. Methods in which the skin is soaked or treated with common salt or a strong solution of brine, so that, owing to the hygroscopic nature of this substance, real drying does not take place. This method of cure is known as "wet-salting."

Now experience has shown that very few, if any, cases of anthrax have been traced to infection from "wet-salted" goods, and the reason for this may be fairly easily conjectured. In the first place, they are not dusty, and so the spores are not so likely to gain access to the most susceptible parts—the face and neck. (Contrary to the general belief, hides and skins are practically never carried on the shoulder.) Then, again, the spores under damp conditions may tend to develop into bacilli and perish, as has been suggested by Spear.[3] We must, however, bear in mind that "wet-salting" is not the usual method employed in places such as China, where anthrax-infected skins are likely to be more common from the fact that no control is exercised over infected stock, but in places like Australia and North and South America, where anthrax-infected skins are not so likely to be brought in for cure.

Why, it may be asked, has not "wet-salting" become the usual method of cure? The answer is because the process must be carried out immediately after flaying the animal and it is difficult and expensive to carry salt to the semi-civilised places from which many skins are brought down; the freight of "wet-salted" goods is rather higher as they naturally weigh more; and, finally, the primitive methods of the natives are not easily changed. As a counter-balancing advantage to the increased cost, however, is the fact that "wet-salted" goods are better preserved, their condition and value can be more correctly estimated, and they are easier and safer to handle in the early processes of tanning. As a fact, no improvement in this direction is indicated by import statistics, the relative proportions having remained fairly constant during the last decade.

TABLE I.

Year.	Imports in hundredweights.		Percentage imported as "wet-salted."
	"Dry."	"Wet-salted."	
1899	446,725	763,548	63
1909	463,993	737,602	60

From the examinations I have made of dust, dirt, and blood-stained material taken from dry hides, I have come to the conclusion that the proportion infected is larger than one would have expected. For example, 25 samples of dirt, &c., were taken from dry hides lying exposed for sale in the Bermondsey hide wharves; no discrimination was used beyond choosing dirty and low-quality hides. Agar plates were made from emulsions in which non-sporing organisms had been killed, and from the first 31 satisfactory plates—that is to say, those which were not overgrown or showed hardly any growth—two undoubted colonies of B. anthracis were obtained. The finding of these isolated spores suggests that they were carried in contaminated soil rather than that the skin was taken from the carcass of an animal that had died from anthrax. It is interesting to note that one also very frequently met with organisms that were only distinguished from B. anthracis after a careful examination of their cultural and pathogenic characters. From the above-mentioned 31 plates 16 distinct types of anthracoid organisms were so obtained; these were indistinguishable from B. anthracis in the primary cultures.

[1] C. W. Ponder: A Report to the Worshipful Company of Leathersellers on the Incidence of Anthrax amongst those Engaged in the Hide, Skin, and Leather Industries, with an Inquiry into Certain Measures aiming at its Prevention. Published by the Company, 1911.

[2] F. W. Eurich: Annual Reports of the Bradford Anthrax Investigation Board, 1906-10.

[3] J. Spear: Anthrax in London Hides and Skins. Report of the Medical Officer to the Local Government Board, 1882.

If any process of disinfection is to be completely effective it is obvious that it must be carried out at a stage before opportunities of infection arise. In connexion with hides and skins it is essential that the goods should be disinfected at a stage previous to their being unloaded from the vessels, for statistics show that workmen in dockyards and warehouses are even more frequently infected than are those who handle the skins after they reach the tanyard. Thus, of 113 cases of anthrax during the seven years 1903–09 that were considered to be due to handling hides or skins, 60, a proportion of 53 per cent. of the total, occurred among those working in dockyard or warehouse, while only 42, or 37 per cent., occurred among tannery workers; it would clearly be therefore only a half-measure to disinfect the goods in the tanyard.

Before export the goods are collected by shippers at the ports of shipment and are there roughly cleaned, sorted, and baled, so that if a simple process of disinfection could be devised, there should be no difficulty in carrying it out at this stage, and this being done, all the cases of anthrax in the country of import would be prevented. Many suppose that certain outbreaks amongst animals in this country are due to the food-stuffs becoming contaminated when carried in the holds of steamers, trucks, &c., which have previously carried dry hides; if disinfection were carried out before shipment, this possible source of infection would also no longer exist.

To summarise the requirements of an effective disinfecting process for hides and skins:—

1. It must be capable of destroying the spores of B. anthracis when present on hides and skins under any of the conditions in which they may be supposed to occur naturally—e.g., when protected by blood dried hard.
2. It must not injure the hides or skins or interfere in any way with the subsequent processes by which they are converted into leather.
3. It should be simple, so that it can be carried out at the ports where the skins are collected and shipped.
4. It must not add considerably to the cost of the raw material.
5. It should not involve the use of substances of a nature dangerous or poisonous to those who have to carry it out.

Mr. Seymour-Jones's "Formic-Mercury" Process for Disinfecting Hides and Skins.

The "Formic-Mercury" process consists in placing the dry hides for 24 hours in a "soak" which is made up to contain 1–2 per cent. of formic acid and 0·02 per cent. of perchloride of mercury and then "salting" them with sodium chloride. The action of the "soak" is to swell up the fibres of the hide by causing them to absorb water, the result being that the hide returns to a condition closely resembling that in which it was when taken from the animal's carcass. This swelling action also affects the dry albuminous matter which may be supposed to protect the spores, the perchloride of mercury therefore permeates the protecting material and its full action can be exerted. Moreover, as has long been known, the presence of the weak acid prevents the rapid deterioration of the germicide from the formation of insoluble albuminates. After the "soak," the "salting," by again abstracting water, converts the hides into a condition which differs very little from the "wet-salted" state of a hide which had been so treated immediately after flaying.

By this process, essentially simple, we have a combination of factors which would seem to act harmoniously towards accomplishing the desired disinfection. In the first place, a good deal of cleansing must take place; then the hides are converted into the "wet-salted" state, a measure in itself of extreme value; finally, the spore is attacked by the perchloride of mercury, the action of which is accentuated by the swelling and penetrating effect of the acid and by the fact that under these conditions its germicidal power is not minimised by the formation of insoluble albuminates.

Let us consider how this process meets each of the requirements which, as stated above, are demanded by an ideal disinfecting method.

1. *Efficiency.*—Having followed the development of this process since its inception, I have had the opportunity of testing many combinations of different acids with perchloride of mercury and other salts on anthrax-infected materials and have satisfied myself that the action of this combination on the spores of B. anthracis is very profound. It is unnecessary here to recapitulate these tests, and it is sufficient to say that they led to the adaptation of the strengths described below, and confirm the final results.

The method that I adopted is fully described in the report previously referred to; it was briefly as follows:—

Test preparations were made by cutting out pieces of dry hide to a given weight. In the centre of each piece a drop of blood freshly drawn was allowed to fall, and before it clotted a loopful of emulsified spores of B. anthracis, taken from a strain obtained from a cow dead from anthrax, was thoroughly incorporated. The preparation was then dried and kept some weeks until required. When disinfection was attempted the proportion of the fluid to the weight of the hide was always the same as it would be under practical conditions. After disinfection the clot could be easily removed with a scalpel from the hide and introduced under the skin of an animal. Introduction into a culture medium was not found to be a satisfactory indication of the vitality of the spores, even if the free perchloride of mercury were neutralised with ammonium sulphide. Control tests with untreated clots always caused the death of a guinea-pig in less than 48 hours.

The results of tests on animals, kindly conducted by Dr. Graham Smith at Cambridge, are given in the following table:—

TABLE II.—*The Disinfecting Action of a Solution containing Perchloride of Mercury and Formic Acid on Anthrax Spores protected by Dried Blood on a Hide.*

(Weight of pieces of hide, 2·5–3·0 grm.; fluid used in disinfecting each, 25 c.c.; temperature of room, 60° F.; time of treatment, 24 hours; soaked in brine, 24 hours.)

Series.	Experiment.	$HgCl_2$.	Formic acid.	Result.
1	Two guinea-pigs inoculated with clot from hide treated with brine only (control).	—	—	One died in 36 hours; the other in 48. In both the appearances were typical and anthrax was confirmed by microscopical and cultural tests.
1	Ten guinea-pigs inoculated with clots from ten hides treated by full process.	0·01%	1·0%	Nine survived. One died after three days; the appearances were typical and anthrax was confirmed by microscopical and cultural tests.
2	Two guinea-pigs inoculated with clots from hides treated with brine only (controls).	—	—	One died in 36 hours; the other in 48. Appearances typical and anthrax was confirmed by microscopical and cultural tests.
2	Ten guinea-pigs inoculated with clots taken from ten hides which had undergone full process.	0·02%	1·0%	Six survived with no ill-effects. Four died; one after 6½ days, one after 7½ days, and two after 9 days. Anthrax confirmed by tests in every case.
3	One guinea-pig inoculated with clot taken from a hide treated with brine only (control).	—	—	Died in 36 hours. Typical appearances of anthrax. The disease was confirmed by microscopical and cultural tests.
3	Nine guinea-pigs inoculated with clots taken from nine hides treated by the full disinfecting process.	0·1%	1·0%	All survived with no ill-effects.
3	Two guinea-pigs into *each* of which clots from *ten* hides which had gone through the full disinfecting process were inoculated.	0·1%	1·0%	Both survived with no ill-effects.

We see in these tests that using a 0·1 per cent. solution of $HgCl_2$ in what amounts to 29 tests on guinea-pigs the clots were disinfected in every case. When 0·02 per cent. $HgCl_2$ was used in ten tests six clots were disinfected, whilst in the other four the spores were so altered that the death of the guinea-pigs only took place after about a week or more. With 0·01 per cent. $HgCl_2$ in ten tests the clots were disinfected nine times, but in one the guinea-pig died after only three days.

It would therefore appear that to ensure perfect safety one should recommend that a strength of 0·1 per cent. $HgCl_2$ (1 in 1000) be used. I think, however, that this is unnecessarily strong, for it must be remembered that one cannot

decide what strength of a disinfectant is appropriate for practical purposes by an opinion based on laboratory tests alone. Other considerations, such as expense, must be carefully taken into account. I am personally of the opinion that the most suitable strength to use would be 0·02 per cent. $HgCl_2$ (1 in 5000); I base this opinion on the following points:—1. The tests are as stringent as I could devise; in actual practice many of the conditions would be more in favour of the disinfection than in my tests—e.g., the higher temperature of the water in places like India, China, and the Straits Settlements. 2. The other factors in the disinfection—namely, the cleansing and the conversion into the "wet-salted" state—I regard as more important even than the actual destruction of the spores by perchloride of mercury. 3. Though the spores treated with 0·02 per cent. $HgCl_2$ in a small proportion of cases were able to kill a guinea-pig after the delayed period of seven days it does not follow that they would even set up the disease in man, who, there is evidence to show, is much more resistant to anthrax than the guinea-pig.

Little need be said as to the way in which this process is calculated to meet the further requirements of an ideal disinfecting method.

Injury to hides and skins.—In the opinion of the leading leather trades chemists and practical tanners who have experimented with this process no damage whatever is done to the goods, but, on the contrary, they are better preserved, easier to evaluate, and less likely to give trouble at the early stages of tanning since they are better preserved against putrefaction. The damage which $HgCl_2$ by itself does to the skin is prevented, since the formation of insoluble albuminates is inhibited by the acid which is present.

Application.—The process is a simple one, and it is clear that it could be carried out by unskilled labour in the ports of shipment. The necessary materials for the "soak" could be sent out in a concentrated state.

Cost.—Mr. Seymour-Jones estimates that the total inclusive cost of the process per hide would not exceed 3·75*d.* even in remote ports. When it is remembered that the value of a raw hide is roughly £1, the extra cost of disinfection cannot be considered appreciable. The process is not patented.

Danger to workmen.—There would be no danger in using $HgCl_2$ in the required dilutions; the goods would need very little handling.

A practical method having been suggested, how can its application be ensured to those goods which constitute a potential danger to our workmen? The American Government has led the way by making it illegal to import hides and skins into their country unless accompanied by a Consular certificate stating that there is no anthrax among the cattle in the district from which they are exported or that the goods have been submitted to a disinfecting process. As regards the first requirement, it is ineffective because the skins come to the port from far inland, whilst the second is useless because no effective applicable disinfecting process is suggested.

Civilised Governments should forbid the importation of hides or skins unless either (1) they have been submitted to the ordinary "wet-salting" process immediately after flaying; or (2) if cured by drying they have been converted back to the "wet-salted" state by the "formic-mercury" process before leaving the country of export. If such regulations were adhered to I am convinced we should hear no more of anthrax amongst the dock labourers and warehousemen in Bermondsey and Liverpool, nor of those sporadic cases which are continually cropping up in the tanneries in different parts of the country.

Pathological Laboratories, Cambridge University.

SERVICE FOR MEDICAL WORKERS IN BRIGHTON.—The annual special service for medical practitioners, nurses, and others engaged in medical work was held in Brighton parish church on Sunday evening, Oct. 22nd. The Rev. Dr. Upcott, head-master of Christ's Hospital, was the special preacher. In the course of his sermon he declared that the occupations which those in his congregation so well represented that evening were the purest and noblest in mankind if used in the right way and spirit, for it was pre-eminently a life of service. The collection was in aid of the Queen's Nurses' Fund.

THE TREATMENT OF BUBONIC PLAGUE BY THE IMMEDIATE INCISION OF THE GLANDS.

BY V. B. NESFIELD, F.R.C.S. ENG.,

CAPTAIN, I.M.S.; DEPUTY SANITARY COMMISSIONER, FIRST CIRCLE UNITED PROVINCES OF AGRA AND OUDH.

WHEN plague first appeared in Bombay in 1896, owing to mistakes in diagnosis, plague glands were occasionally removed. The patients were found to improve greatly for a few days, but ultimately invariably died from plague septicæmia. For this reason the removal of plague glands has been strongly condemned.

In 1905 I published the case (*Indian Medical Gazette*) of a Sowar of the 6th Bengal Cavalry who developed plague in Benares. On arrival in camp he fell off his horse and was found to have a large painful gland in the left groin. His temperature was 103·4° F. and his pulse was fast, weak, and dicrotic. He had severe headache and some delirium. The bubo had not been noticed six hours previously. An incision was made into the gland, which cut like a raw potato, and serum and blood escaped which showed swarms of the typical bipolar-staining bacilli. Iodine lotion (1 drachm of tinct. iodi to 2 ounces of water) was put into the wound, and a dressing soaked in this lotion applied. Two hours later the headache had disappeared, the temperature was 99°, and the patient was much better. Two days later the temperature rose again, but fell on opening the lips of the wound with a director. The patient recovered, and was able to continue his journey in three weeks' time. The case was a most severe example of bubonic plague. The gland was incised with the object of setting free the enclosed toxins.

During the severe plague epidemic in Lucknow in 1907 I treated 87 cases of plague in the cantonment. Sixty-two of these cases were bubonic and 25 pneumonic, septicæmic, and what might be termed splenic. All the bubonic cases (Lucknow cantonment) were treated by the immediate incision of the swollen glands. By this method the great majority of the truly bubonic cases seen within 48 hours of the appearance of the buboes recovered. But it should be noted that some people dead of the disease were seen for the first time in their houses, having died overnight, so that those brought in alive to hospital with buboes may be looked upon as showing some resistance to the disease. Of the 62 cases treated in this way eight died and 54 recovered, giving a mortality of only 15·3 per cent. A few of these were old-standing cases, and would probably have recovered without treatment, but some were hopeless on admission, and some were picked up miles away from their homes, having wandered during the night; these wandering cases generally died, so that a mortality of only 15·3 per cent. is remarkably good, and I believe better than any recorded. Surgeon-Captain Thomson gave a mortality of 62·7 for cases with buboes, and 78·6 for cases without palpable buboes in the Parel hospital in 1896–97.

There was every opportunity for studying these cases very thoroughly, as many of them were private servants, and notice was frequently given on the first sign of fever, and thus it was possible to see them from the beginning. The special feature of the bubonic cases was a one, two, or three days' fever, with rambling speech at night, restlessness, headache, backache, and vomiting, together with a normal or subnormal pulse tension. During this stage these cases resembled ordinary Indian fever, which one usually calls malaria, but with the difference that in malaria the pulse tension is high during the fever and there is no marked restlessness, headache, or rambling speech and there is sweating on remission.

After a day or so of this preliminary fever a large painful gland suddenly appeared in the groin, axilla, neck, behind the internal malleolus, the popliteal space, or behind the internal condyle of the humerus. The condition of the patient now became acute, the delirium very marked, headache very severe and the pulse very fast and dicrotic. Without treatment death usually results in these cases in from 3 to 48 hours.

Professor R. T. Hewlett in his "Manual of Bacteriology" states that 70 per cent. or more of the bubonic cases begin with the two or three days' initial fever.

Assistant Surgeon Thos. Whyte, of the Bombay medical staff, describing a case of plague in Káthiáwar in 1820, says: "She was in the ninth day of the disease, and had a bubo in the upper part of each thigh, both very painful to the touch, which came on the second or third day of a fever, which had deprived her for a time of her senses."

In General Gatacre's report of the epidemic in Bombay in 1896 the following sentences appear: "The glandular or bubonic is the common form of plague, and comprises 80–90% of all cases. ..... The swellings *sometimes* appear at the onset, *usually* on the second or third day, and often not until later in the course of the attack. They consist of single glands, or two or more separate glands agglomerated into a mass. ..... A sudden rise of temperature in the course of an attack generally indicates a fresh bubo."

Septicæmic type.—Enlarged glands may appear in several regions later on.

Pneumonic or thoracic type.—This type is very fatal, and in some cases is occasionally complicated with the development of external buboes, which arise from a secondary extension of the virus.

Dr. J. F. Payne in Clifford Allbutt and Rolleston's "Tropical Diseases" says: "Buboes are in some instances the first symptoms to attract the attention of the patient, perhaps by a sudden lancinating pain. More usually they occur after the onset of fever, on the second, third, fourth, or even the fifth day of the disease."

Special attention in this article is called to the preliminary fever as bearing on the true pathology of the disease and justifying incision. One is inclined to look upon the bubo as the initial lesion, and very naturally so, as a little fever is such a common event as to be overlooked by the native patient; moreover, one generally sees him for the first time with a swelling of a few hours' duration, frequently rambling in his speech and nearly moribund. The common conception of the pathology is that the bacilli enter by a skin lesion, travel up the lymphatics, and are arrested by the related superficial lymphatic glands. This is supposed to contra-indicate incision. It may be that a few bacilli lodge in the gland related to the inoculated area, though why they should, when the lymph channels are large enough for the passage of leucocytes, requires explanation. None of my cases had any local lesion; the Indian Plague Commission has altogether only reported four, so that the bacilli on first entering cannot be irritating. It is far more probable that they do not lodge locally, but enter the general circulation as rapidly as morphia when injected hypodermically. In some cases with a local cutaneous lesion the related gland is normal and a non-related gland is enlarged.

Plague should not be compared with an ordinary septic process, with a local cutaneous or subcutaneous inflammation and swelling of the related glands. It compares more closely with typhoid fever or acute osteomyelitis.

* Staff-Surgeon Wilm (Hong-Kong epidemic 1896–97) expressed the opinion, that infection through the skin is not common, "*for, on the one hand, in the great majority of cases, buboes do not appear until after the onset of the severe symptoms, and, on the other hand, were such a mode of infection common, we should expect to see much more frequently local affections of the skin.*"

I think that infection through the skin is the general rule, but the bacilli pass rapidly into the lymphatic and general circulation. The flea, prior to sucking blood, injects saliva to act as an anti-coagulant; the bacilli, which must be few at the most, are injected with the saliva, possibly directly into a capillary lymphatic or blood-vessel. The anti-coagulant, possibly by paralysing the local cutaneous and endothelial cells, may assist the bacilli. During the incubation period of two to ten days the bacilli probably develop in the spleen or elsewhere, and are probably responsible for the prodromal symptoms of lethargy and headache. They probably enter the general circulation again during the initial fever, as occurs during the first two weeks of typhoid. But immune bodies being also present the bacilli soon succumb, the few survivors settle down in a superficial lymphatic gland, just as typhoid bacilli settle down in the lymphoid tissue of the small intestine, and staphylococci in the epiphysial line of a growing bone in acute osteomyelitis. The election for the superficial glands is probably due to the fact that they are frequently the seat of small inflammations.

In No. 10 district, Bombay 1896–97, 85 per cent. of the plague cases were bubonic, and of these in 60 per cent. the femoral and inguinal glands were enlarged, in 17 per cent. the axillary and inguinal glands were enlarged, and in 9 per cent. the cervical and inguinal glands were enlarged. This is about the order and proportions in which these glands suffer from small inflammatory conditions. The organisms in the glands being shut off from the blood-stream, as in acute osteomyelitis, develop rapidly, and elaborate toxins, which in the case of plague may produce death in a few hours. Septicæmia tends to ensue as the disease progresses and the resistance of the body is broken down. In all cases of plague examined after death bacilli were found in the spleen. An acute attack of osteomyelitis can be cut short and the bone saved by early excision of the periosteum and opening the medullary cavity. Septicæmia is not produced by this interference; why, then, should one be afraid of septicæmia when opening a plague gland in the earliest stages?

Mr. James Cantlie, on p. 28, vol. ii., "The Plague in India," Government of India Home Department, says, "Plague is a polyglandular disease of an extensive nature." This is certainly not the case clinically in India. Nor have I seen swelling of the internal glands or mesenteric. The teaching that the disease is an extensive polyglandular one tends to make the physician feel that all attempts at treatment are futile; it is an untrue and over-melancholy aspect; as shown above, a very great deal can be done towards curing plague. Inoculation experiments on guinea-pigs (preparations in the College of Surgeons Museum) generally show post mortem an enlargement of the axillary and inguinal glands alone and great enlargement of the spleen. Post-mortem examinations of rats also demonstrate this point.

In addition to the bubonic cases there were 8 pneumonic cases with 6 deaths, 10 septicæmic cases with 6 deaths, 4 splenic cases with 3 deaths, and 3 mixed cases with 3 deaths. The total mortality of the 87 cases was thus 29·87 per cent. The mortality in the city of Lucknow during the same period was between 80–90 per cent., as it was a particularly severe epidemic.[1]

In nearly every case when a gland was incised the fluid was examined under a microscope; bipolar-staining bacilli were always present. The most favourable cases were those in which the gland swelling developed suddenly, and in which the gland tumour was large. In many cases after incision of one gland others developed in various parts of the body, sometimes in three or four places. In each case the swollen glands were incised as soon as they appeared. These secondary glands remote from the supposed original lesion prove that bacteria were present in the circulating blood. In some of these cases of multiple buboes B. pestis was found in a drop of blood from the finger. Most of these multiple cases recovered.

The pneumonic cases were mostly of a broncho-pneumonic type, the dull patches coming and going from day to day. The special features of these cases were blood-stained sputum (full of B. pestis) and great mental distress and horror. They were treated by frequent dry-cupping over the dull areas, absolute rest, and iron and digitalis internally.

The septicæmic cases always developed, sometimes only an hour before death, an œdematous swelling over some superficial gland. Other cases of a more chronic type developed true but smaller buboes than the strictly bubonic cases. These buboes as soon as they appeared were incised. The septicæmic cases appeared to be due to a primary or, at least, marked focus in the spleen, and perhaps these cases should more accurately be termed splenic plague. It is doubtful whether the B. pestis can flourish in the blood-stream without support from a localised lesion elaborating toxins; and there is reason to think that this focus is in the spleen.

There were 4 cases with special pain over the spleen, which I think were due to the spleen being involved in place of the superficial glands.

Every patient received the following mixture four times a day: Tinct. ferri perchlor., ♏xxx.; tinct. digitalis, ♏v.; glycerine, ℥i.; aq. ad ℥ii. The iron was given because it is so useful in diphtheria; the toxæmia of plague is not unlike that of diphtheria. In addition the patients were given 6 oz. of rum during the 24 hours and were fed hourly through the day with condensed milk and Horlick's malted milk. As much water and lime-juice as desired were given. The patients were kept absolutely at rest.

The management of plague cases is a difficult matter on account of the marked restlessness and in some cases actual mania. One boy of 18 wandered away at night, and was found in the morning under a tree more than a mile away. Three cases developed paralysis of the pharynx, and had to be fed with an œsophageal tube; many required catheterisation, while six had severe diarrhœa, with blood. Two cases

[1] It is very difficult to obtain the true plague mortality of a district, as the returns are compiled from police information. This year the mortality shown in some districts of the United Provinces was 100 per cent., in others 90 per cent.

never recovered their mental balance, and left the hospital insane. Morphia is the best remedy for the mania of the acute stage.

The Method of Making the Incision and the Dressing.

The skin was cocainised by intradermic injections of ½ per cent. cocaine and adrenalin; it was then freely incised, and the swollen gland or glands laid well open by two incisions crossing each other at right angles. The gland and subcutaneous tissues were not disturbed except for the clean-cut incisions. The wounds were dressed with absorbent wool, wrung out of iodine lotion (℥ 1 ad ℥ ii. water). The wool was then covered with oil paper and a layer of perchloride wool and bandaged. The wounds were dressed once or twice a day, depending upon the exudation.

The experience obtained from these cases shows that early incision into a plague gland produces an immediate improvement in the patient's condition. The temperature is lowered and the severe headache alleviated, and if the patient is seen during the first 24 hours the probability of his recovery is very great.

The theoretical reasons for immediate incision of the glands are as follows:—1. Toxins and bacilli are set free and exude into the dressings in place of the blood stream or lymphatics. 2. The incision relieves the intracapsular pressure (which is very great), re-establishes the glandular circulation, and thus the germicidal substances of the plasma are brought into the stronghold of the bacilli. 3. The incision produces a copious flow of serum containing alexin and plague antibodies. As is well known, alexin (complement) is a powerful germicide for cholera, typhoid fever, and plague bacilli that have been prepared by their specific antibodies. Bordet and Gengou demonstrated these antibodies in 1901, and their antimicrobic nature was demonstrated by Yersin. 4. Bordet, Gengou, and Levaditi clearly demonstrated that there was no alexin in circulating plasma; I was able to demonstrate this point also by mixing blood with 9 volumes of 1·5 per cent. salt and centrifuging immediately. The supernatant plasma contained no alexin, and did not clot on diluting with an equal part of water; hence the great value of serum over circulating plasma. 5. Never once were bacteria found inside leucocytes in smears taken from the glands. But leucocytes will readily take up B. pestis in the presence of serum from a plague patient. One must conclude from this that there are no opsonins (alexin?) in the intact gland, though these are present in the serum exudate of the divided gland. Hence division of the gland not only liberates toxins and bacteria, but also produces a flow of serum, lymph, and leucocytes containing immune bodies, alexin, and opsonins; so that the bacilli are not only destroyed directly, but are also engulfed by phagocytes.

The theoretical objection to incision is that the gland forms a barrier between the bacilli and the general circulation, any disturbance to this barrier being therefore fraught with great danger. As shown above, the plague bacilli reach the gland from the blood, and not *vice versâ*. It is probable that many reading this article will not be convinced of the very great benefit derived by immediate incision, but no one should be afraid of the experiment, for whatever other measure is undertaken eight to nine patients will die out of ten, while by employing incision only one or two will die out of ten.

In the Government of India's treatise on Plague, 1896–97, vol. ii., p. 28, Mr. James Cantlie states the following, which I wish to refute:—

> The result of experience gained by local, radical, or tentative treatment of the glands does not lead one to expect much benefit from them. That abscesses should be opened when they point, or when fluctuation is perceptible, is of course natural; but that local remedial steps should be undertaken for the purpose of affecting the course of the disease by acting on the gland is, from what we know of the pathology of the disease, scarcely rational. Injection of a swollen gland when it is accessible, as in the groin, with such substances as carbolic, perchloride of mercury, or a solution of the perchloride of mercury and iodide of potassium, has perhaps a theoretical basis of justification, but practically little good can be ascribed to it. The latter-mentioned solution may have a higher claim, as in several cases in which it has been administered, the temperature falls and the patient seems easier. *It may be, however, that the mere pricking of the tense capsule of the gland* even by needle punctures may serve to relieve tension and thereby pain. This leads one to the belief that subcutaneous incision of the gland may be attended with beneficial results, and it is a method of surgical procedure not without precedent. *Early free incision of the gland is not to be recommended*, nor can excision in any way be justified. The disease is a p lyadenitis of so extensive a nature, that eradication of infected glands is an impossibility. A gland, when swollen, red, and painful, may be smeared with glycerine and belladonna, or poulticed to relieve pain, and when fluctuation is perceptible it should be opened, but further procedure is useless.

Mr. Cantlie suggests that pricking or subcutaneous incision does good, but he prohibits a free incision. It would be interesting to know what experimental proof he had for the latter statement.

Identification of Plague in a Corpse.

Take a darning-needle, and drive the point into a penholder. Make a small cut in the skin over the spleen, and drive the darning-needle (eye forwards) into the spleen. On removing it, the eye will be found to be filled with spleen pulp. Smear this on a slide and stain with 1 per cent. watery methylene blue. Typical plague bacilli will always be found in a case of plague.

Protection against Infection.

None of the attendants or myself contracted plague, in spite of very intimate contact. The following precautions were taken: 1. Before examination the patient was brought out of his house into the open. In the plague hospital grass huts holding two patients only, and open at two ends, were employed. 2. Camphor was carried in the pocket, and the native attendants in addition were made to smear eucalyptus oil 1 part, sweet oil 60 parts on their calves, and all over their bodies once a day. No one was inoculated because in 1906–07 the vaccine was under preparation.

Mussoorie, United Provinces, India.

ACETONURIA IN CHILDHOOD:

A STUDY OF ITS PREVALENCY IN THE MEDICAL WARDS OF A CHILDREN'S HOSPITAL; WITH AN INQUIRY INTO ITS CAUSE.

BY ROBERT S. FREW, M.D. EDIN., M.R.C.P.,

MEDICAL REGISTRAR, THE HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET, LONDON.

THE acetone bodies, consisting of B. oxybutyric acid, aceto-acetic acid, and acetone, have long been recognised as occasional constituents of the urine in children, and their occurrence has been associated with more or less well-defined clinical groups. These groups may be classified as follows: 1. In diseases in which gastro-intestinal symptoms (diarrhœa, vomiting, or constipation) are prominent—e.g., in pneumonia, tuberculous meningitis, infantile diarrhœa, &c. 2. In cases of so-called "cyclical vomiting" where recurrent attacks of vomiting occur, associated with diarrhœa or constipation, and the presence of acetonuria. 3. In conditions in which fever is present. 4. Lastly, there is the toxic group, including diabetic coma, post-anæsthetic poisoning, and salicylic acid poisoning.

The discovery of acetone in the urine of children suffering from diseases not included in such a classification led me to make a more extended investigation into this subject, and the results are herewith set forth.

For the past year or so the urine of all children admitted to the medical wards of the Hospital for Sick Children, Great Ormond-street, where specimens were obtainable, has been tested for acetone. The cases were in no way selected, and so comprise instances of most of the diseases met with in children varying in age from a few days to 12 years old. In all, the urine of 662 children was so examined.

Method Employed.

At first only the specimen passed within 12 hours of admission was examined; in the latter cases, in addition, specimens passed about 36 and 60 hours after admission were also tested. Rothera's test for acetone, slightly modified by Dr. A. E. Garrod, was used in every case.

Rothera's test.—5 c.c. of urine are saturated with ammonium sulphate crystals, 2 c.c. of ammonia are added, and then a few drops of a freshly prepared 5 per cent. solution of sodium nitroprusside. Acetone gives a slowly developing permanganate colour. Dr. Garrod's modification consisted in adding to the urine an equal quantity of a saturated solution of ammonium sulphate in place of saturating the urine with $(NH_4)_2 SO_4$ crystals, thus enabling the test to be performed more quickly, without affecting its accuracy, as proved by numerous controls.

In the urine of children who have had rhubarb or senna a pink colour develops on the addition of the ammonia, due to

the presence of chrysophanic acid, but this is readily distinguished. The rapidity of the development of the permanganate colour gives a rough estimate of the quantity of acetone present.

In specimens obtained just after admission acetone was rarely found; those passed 12 hours after admission frequently gave a positive reaction. The maximum was found in the 36-hour specimens, and after that a gradual diminution occurred, all trace being gone by the fourth day usually. In cases in which the acetone was never very marked, it was in the specimen passed 36 hours after admission that it was most marked, sometimes being found in this specimen only. In those cases in which the acetone reaction was markedly positive the presence of aceto-acetic acid was also found by the use of the ferric chloride test.

Using the above method, the urine of 662 cases was examined, and in 408 of those, that is in 61·6 per cent., acetone was found. One is therefore justified in saying that acetonuria is of common occurrence in hospital children.

When an attempt was made to allot those cases to the groups mentioned at the beginning of this paper the result was unsatisfactory. There were two cases of diabetic coma, none of post-anæsthetic poisoning, none of "cyclic vomiting," 150, or 22·5 per cent., associated with definite gastro-intestinal symptoms, leaving 38·5 per cent. unaccounted for under such headings.

How, then, is the fact to be accounted for that 61·6 per cent. of all the children admitted to hospital develop acetonuria? In the first place the appearance of acetone in the urine is caused by abnormal fat katabolism depending on "carbohydrate starvation." This "carbohydrate starvation" may result from (1) deficiency or absence of carbohydrates in the diet, (2) a diminished power of absorption or assimilation of the carbohydrates, or (3) inability to digest the carbohydrates. It is therefore necessary to determine under which subdivision the "carbohydrate starvation" occurring in children on admission to hospital should be placed.

1. *Deficiency or Absence of Carbohydrates in the Diet.*

This is a well-known cause of acetonuria, examples of which are seen in the following two cases:—

CASE 1.—A male, aged 5½ years, a case of recovered empyema. The patient, who had been eight weeks in hospital and whose urine contained no acetone, was put on diabetic diet for 24 hours. Nine hours later a faint trace of acetone was present, which became very marked after 17 hours, and extremely marked with a trace of aceto-acetic acid after 23 hours.

CASE 2.—A female, aged 5 years, who had recovered from chorea after having been 11 weeks in hospital and whose urine contained no acetone, was put on diabetic diet for 24 hours. After 17 hours acetone was present, and it became very marked with a trace of aceto-acetic acid after 30 hours.

Examples are also seen in cases of general starvation, and a certain number of those are found in my series; but here the acetonuria would be present on admission, and this could account for but a small number of the cases. After admission this source can be eliminated, for their diet then, in all cases, consisted almost entirely of carbohydrates for the first 24 hours, being either milk only, or rice pudding, bread and butter, and milk.

2. *Diminished Power of Absorption or Assimilation of the Carbohydrates.*

Under this heading the two cases of diabetic coma would come, but not the majority of the remaining cases, for on numerous occasions dextrose, which requires no inversion but can be absorbed at once, was administered, and without exception the acetone had disappeared in about 12 hours, whereas in similar cases which were not so treated the duration was about 36 hours longer.

3. *Inability to Digest Carbohydrates.*

We have thus found that the "carbohydrate starvation" necessary to produce the acetonuria is not caused by deficiency of carbohydrates in the diet, nor is it due to a diminished power of absorption or assimilation, therefore it follows that it must result from an inability to digest the carbohydrates in the diet.

The carbohydrates of the diet given consist of two forms, lactose or milk sugar and cane sugar, both disaccharides, and starch, a polysaccharide. Before absorption can take place these must be converted into monosaccharides. This change takes place in the small intestine, lactose and cane sugar undergoing inversion, and giving as a result dextrose and galactose, and dextrose and levulose respectively, and these can be absorbed as such. Starch requires a more lengthy process, first undergoing digestion which produces maltose and dextrin, next these are inverted to dextrose, and absorption can then take place. A more elaborate process is thus necessary to prepare starchy foods for absorption than is required in the case of milk, and anything interfering with digestion should give more marked results in those fed on starches than in those getting milk. In other words, in the case of children under 2 years, whose diet is almost entirely milk, the percentage of those developing acetonuria should be lower than in those over 2 years, who are having a starchy diet, and this is just what one finds.

Under 2 years of age specimens from 99 cases were examined, and of those 47 per cent. developed acetonuria, whilst in specimens examined of children between 2 and 9 years, 68 per cent. gave a positive reaction. The minimum percentage, 41 per cent., was found in children under 1 year, the maximum, 84 per cent., occurring between 3 and 4 years.

The "carbohydrate starvation" thus being due to an inability to digest the carbohydrates, it was next sought to ascertain the cause of this temporary derangement. Naturally the disease from which the child was suffering was thought of as a cause, and an analysis was made of its prevalency under two groups: 1. According to the system affected. 2. In certain well-defined diseases.

1. *According to the system affected.*—(*a*) Diseases of the digestive system, including stomatitis; œsophageal constriction, two cases; pyloric stenosis; diarrhœa, acute and chronic; cirrhosis of liver; intestinal parasites; and abdominal tuberculosis, &c. Of 99 such cases 63 per cent. had acetonuria. (*b*) Diseases of the respiratory system, including pneumonia, lobar and lobular; pulmonary tuberculosis; pleural effusion, serous and purulent; foreign body, &c. Of 168 such cases 62 per cent. had acetonuria. (*c*) Diseases of the circulatory system, including congenital and acquired heart disease. Of 59 such cases 61 per cent. had acetonuria. (*d*) Diseases of the nervous system, including meningitis, various forms; mental deficiency; chorea; poliomyelitis; myopathy, &c. Of 123 such cases, 65 per cent. had acetonuria. (*e*) Diseases of the urinary system, including nephritis, acute and chronic; calculus; pyelitis, &c. Of 46 such cases, 63 per cent. had acetonuria.

The remarkable uniformity of the percentage under the different systems at once negatived the idea that the acetonuria was in any way due to the disease from which the child was suffering.

2. *In certain well-defined diseases.*—The same fact became evident when one analysed certain of the more prevalent diseases—e.g., pneumonia and broncho-pneumonia, 67 per cent.; tuberculosis, all forms, 62 per cent.; and the rheumatic group, 60 per cent. In fact, the only exception found was in the case of typhoid fever, and such cases showed a remarkable decrease in the percentage that developed acetonuria. I have records of 13 cases, occurring over a period of three years, and of these 2 only, or 15·3 per cent., gave a positive reaction. This fact is, I think, of considerable help in the differential diagnosis of typhoid fever, which is often very difficult in children, especially as Widal's reaction is frequently not positive until convalescence has been established. Further, the presence or absence of fever, which Pawlow[1] has shown diminishes the digestive secretions and might thus account for the derangement, seemed to have no effect, for in cases where fever was present (e.g., tuberculosis, pneumonia, &c.), and in those in which there was no fever (e.g., myopathy, cerebral diplegia, chronic nephritis, &c.), the percentage remained about the same, whilst in the case of typhoid fever it was markedly diminished.

The acetonuria, therefore, was not influenced at all by disease. What, then, was the cause? We have seen that it tended, in the majority of cases, to come on after admission to hospital; that it lasted about three days; that it occurred more frequently in children over 2 years than in those under that age—i.e., it was more marked in those who had before admission received the more complex diet and in whom the change of diet after admission would be greater than in those who were getting a simple diet, chiefly milk, both before and after admission; and, finally, that it was unaffected by disease. It remained, therefore, to inquire into the effect of change of diet. Such an investigation gave very instructive results and afforded the most satisfactory explanation of its occurrence.

[1] Pawlow: The Work of the Digestive Glands, 1902.

The most complete data were obtained in the case of children under 1 year of age. Of such cases I had more or less definite information regarding the diet before admission in 49 instances. Eleven had been breast-fed until admission and were then put on milk and water, the milk being in some cases peptonised, in others "humanised," and in yet others citrated. Every one of these cases developed acetonuria, and it disappeared in the usual way. The remaining 38 cases had been bottle-fed before admission, the chief food used being milk and barley water. Of these, 6 only, or 15 per cent., developed acetonuria.

Here, then, I believe lies the explanation of this temporary acetonuria, for in cases where a change in the diet was made acetonuria resulted; in those in which no change, or but little change, was made acetonuria was comparatively rare. Further, in children under two years the diet before and after admission was more closely allied than in children over that age, and the percentage was lower in consequence. Another factor which would also keep it lower at this age I have already drawn attention to—namely, that the carbohydrate was in the form of a disaccharide, and therefore more easily dealt with. When, however, we look at the case of children over 2 years we find a markedly higher percentage, and here the carbohydrates are chiefly polysaccharides, and the change in diet would thus be greater. It is thus apparent that mere change of diet in childhood is sufficient to bring about carbohydrate starvation and the resulting acetonuria, and that this is caused by a temporary failure of digestion in those cases. Further, as the accompanying chart shows, the change is more marked the younger the child, and there is a steady diminution in this defect as age advances. That it is greatest in

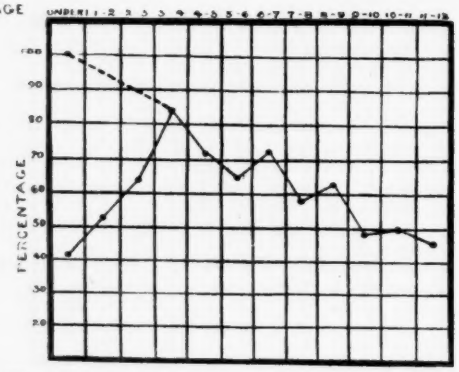


Chart showing percentage of acetonuria at different ages. The dotted line is drawn from the percentage in babies who had been changed from breast feeding to artificial feeding.

the youngest cases is shown by the fact that 100 per cent. develop acetonuria when the diet is changed from human milk to cow's milk. The comparatively low percentage under 3 years of age is not due to an absence of this defect, but is explained by the fact that there is less change in the diet given before and after admission at that age than at any other.

Lastly, as to the association of acetonuria with gastro-intestinal disturbance, it has been shown by Macfadyen[2] that if absorption of the carbohydrates does not take place in the small intestine the sugars are liable to undergo acid fermentation from the bacteria always present in the intestine, with the formation of acetic, lactic, and butyric acids, &c., and that these may cause irritation of the intestines, with the production of diarrhœa, &c. Thus the gastro-intestinal disturbances and the acetonuria may be explained by one and the same cause—viz., the digestive derangement—and the one is not necessarily a result of the other.

Conclusions.

1. That acetonuria occurs in childhood with great frequency.

2. That in the large majority of cases the carbohydrate starvation necessary for its production is caused by a temporary failure of digestion.

3. That this loss of digestive power can be brought about by mere change of diet.

4. That it is more easily set up the younger the child, and that the digestive instability becomes less marked as age advances.

5. That about three days are required before the digestive processes can accommodate themselves to a change of diet.

6. That disease, with few exceptions, has no influence on the production of acetonuria in childhood.

Great Ormond-street, W.C.

[2] Macfadyen: Nencki and Sieber, Archiv für Experimentelle Pathologie und Pharmakologie, 28, 311, 1891.

EXPERIMENTS ON THE CAUSATION OF BERI-BERI.

(PRELIMINARY COMMUNICATION.)

BY E. A. COOPER, B.Sc.,

AND

CASIMIR FUNK, PH.D.

(*From the Lister Institute of Preventive Medicine.*)

THE conclusion that beri-beri was due to a diet in which rice bulked too largely was arrived at by Wernich,[1] Van Leent,[2] and Takaki.[3] Acting upon this conclusion the latter, by modifying the diet of the sailors, has succeeded in practically eradicating the disease from the Japanese Navy. The vast amount of epidemiological evidence collected by Braddon[4] showed conclusively that beri-beri was associated with the continuous consumption of a diet composed too exclusively of decorticated (polished) rice. Braddon's observations brought out the further important point that natives, whatever their race, consuming rice which had been parboiled previous to removal of the pericarp (such as that used by the Indian Tamils) were not in danger of contracting the disease. One difference between these rices consists in the amount of subpericarpal layer remaining on the grains after the various manipulations to which they have been subjected prior to consumption.

An important fact for the investigation of beri-beri was the discovery of Eykman[5] that a polyneuritis in birds (fowls and pigeons) analogous to the human beri-beri is induced by a diet of polished rice, whereas fowls fed on undecorticated rice remained healthy. Eykman also showed that the latter variety of rice could cure fowls suffering from polyneuritis induced by a diet of the former. The next advance was due to Grijns,[6] who showed that the addition of pericarp and subjacent layers removed during decortication (polishings) to the diet of decorticated rice prevented the occurrence of polyneuritis. Neither Eykman nor Grijns adopted the simpler interpretation of their facts that beri-beri was a disease due to the deficiency of some essential dietetic constituent in the decorticated rice, but suggested that the endosperm contained some poison, the antidote to which occurred in the cortical layers removed by polishing.

The solution of the problem has been materially advanced by the work of Fraser and Stanton.[7] These authors having confirmed the preventive and curative results obtained with polishings sought to separate from them the active substance. They extracted the polishings with 0·3 per cent. HCl and precipitated the extract with alcohol. By this means the greater portion of the phosphorus was removed in the form of phytin. By the suitable addition of this phytin to a diet of polished rice they failed to prevent in birds the occurrence of polyneuritis. The alcohol extract, however, possessed protective properties. The alcoholic extract contained proteins, but these were found to be devoid of action. The inactivity of the alcohol-soluble proteins has since been confirmed by Chamberlain and Vedder,[8] who found that the dialysate of the alcohol-soluble fraction contained the active substance.

Schaumann[9] has recently published a comprehensive study of the subject containing the results of many interesting and important experiments undertaken during the past three years. Schaumann's results may be briefly summarised as follows: 1. Inorganic phosphates had no curative properties. 2. Phytin, which had been credited by Aron[10] with some preventive properties, gave entirely negative results. 3 Complex mixtures, such as yeast, rice polishings, Katjang-idjoe beans, if administered in sufficient quantity to pigeons far advanced in the disease, produced a cure. 4. Although an impure

commercial sample of yeast-nucleic acid cured the disease in 3 out of 14 cases (pigeons), it was not possible to obtain conclusive results with all kinds of simple phosphorus-containing substances, such as lecithin, glycerophosphates, and phospho-proteins. For these reasons Schaumann suggests (*l. c.* p. 347) that phosphorus compounds can only exercise curative effects when acting in conjunction with certain other substances.

With this we conclude the *résumé* of the more important work on the problem of beri-beri and pass to the consideration of the results of our own experiments.

We have repeated feeding experiments of former workers upon birds (fowls and pigeons) with the various kinds of rice and have confirmed them, and have also confirmed the preventive action of rice bran (polishings). Experiments with an exclusive diet of various pure carbohydrates—starch, inulin, cane sugar, and dextrin—have been carried out, and it was found that such diets induced polyneuritis with the usual symptoms. These results disprove any intoxication hypothesis concerning beri-beri in birds. A daily ration of 0·5 gramme phytin administered to pigeons fed on white rice did not prevent polyneuritis, and attempts to cure polyneuritis by the addition of phytin, edestin, casein, and egg-yolk were unsuccessful. As the latter two substances are relatively rich in organically combined phosphorus the negative results are important. One gramme of dried pressed yeast per day prevented the development of polyneuritis in fowls, and we were also able to confirm the curative properties of pressed yeast. Yeast-juice obtained by squeezing the ground cells with kieselguhr in a press was found to exert a curative effect like the original yeast. *We have also found that pressed yeast hydrolysed with 20 per cent. sulphuric acid for 24 hours still retained its curative properties.* As all organic phosphorus compounds are completely hydrolysed under such conditions, and phosphoric acid has been shown to be without influence, it is very improbable that the polyneuritis is the result of a deficiency in phosphorus compounds.

After confirming the results of Fraser and Stanton concerning the beneficial effects of the alcoholic extract of rice polishings, we precipitated a water solution of the extract by means of phospho-tungstic acid, and found that the active substance is precipitated entirely by this reagent and that the filtrate is completely inactive.

The curative effect of the precipitate decomposed by baryta in the usual way, which is wholly devoid of phosphorus and also free from carbohydrates or protein groups, was tried upon ten pigeons; it was found to be extraordinarily active and cured the birds even when they appeared moribund, striking improvement occurring in from three to ten hours. In several instances birds which were completely paralysed and supposed to be dying in the evening were found next morning with but some trace of lameness.

Polishings appear to contain only a very small amount of the active substance, and for further progress a very large quantity of polishings must be dealt with.

In conclusion, it appears that the polyneuritis induced in birds by a diet of decorticated and polished rice is not due to the deficiency of phosphorus compounds, but to the absence of some substance not of protein nature, devoid of phosphorus, soluble in water and acidulated alcohol, dialysable, and precipitated by phospho-tungstic acid, and the precise nature of which is being at present investigated by one of us (C. F.).

We are glad to have this opportunity of expressing our best thanks to Dr. C. J. Martin, F.R.S., Director of the Lister Institute, for drawing our attention to this subject, and for help and advice in the course of the investigation; and to Dr. Leonard Braddon of Seremban, Malay States, to whom we are indebted for kindly furnishing an adequate supply of different kinds of rice and rice polishings.

Bibliography.—1. Wernick: Geographisch-Medicinische Studien, Berlin, 1878. 2. Van Leent: Geneeskundig Tijdschrift voor Nederlandsch-Indie, 1880. 3. Takaki: Prevention of Kakke in Japanese Navy, Sei-i-Kwai, 1885, 1886, 1887. 4. Braddon: The Cause and Prevention of Beri-Beri, London, 1907. 5. Eykman: Virchow's Archiv, 148 (1897); Geneeskundig Tijdschrift voor Nederlandsch-Indie, 36 (1896). 6. Grijns: Ibid., 41 (1901) and 49 (1909). 7. Fraser and Stanton: THE LANCET, March 12th, 1910, p. 733; Studies from the Institute for Medical Research, Federated Malay States, No. 12, The Etiology of Beri-Beri, 1911. 8. Chamberlain and Vedder: The Philippine Journal of Science, June, 1911, vol. vi. 9. Schaumann: Die Ätiologie der Beri-Beri unter Berücksichtigung des Gesamten Phosphorstoffwechsels, Archiv für Schiffs- und Tropenhygiene (1910), 14, Beiheft 8. 10. Aron and Hosson: The Philippine Journal of Science, vol. v., February, 1910.

A NOTE ON THE CARBOLIC ACID COEFFICIENT OF DISINFECTANTS.

By F. T. MARCHANT, M.R.S.I.,
LECTURE ASSISTANT IN THE PUBLIC HEALTH DEPARTMENT OF UNIVERSITY COLLEGE, LONDON.

THE Rideal-Walker method of determining the carbolic acid coefficient of a disinfectant often furnishes results which are discrepant—viz., a subculture tube often shows a growth when another tube, containing the same culture exposed to the same dilution of a disinfectant and for a shorter period of time, fails to do so.

It must be assumed that if the same organism in similar numbers is present, then concordant results should always be obtained; but owing to the small amount of fluid which the platinum loop employed in the process for inoculation purposes can hold (and it may also be that there is a diminution in the number of living organisms surviving the action of the disinfectant) it is quite possible that occasionally none of these may be picked up with the loop, and therefore no growth can result. To overcome the discrepancy alluded to, amongst other suggestions, THE LANCET Commissioners[1] advocated the use of a platinum spoon which would hold about three times as much inoculating material as the platinum loop. But, as they pointed out, three or four spoons must be employed; each one being used in turn after being placed on a rack to cool subsequently to sterilisation. This modification has the advantage of employing a larger dose of the organism, but it increases the danger of the diluted disinfectant containing the organism getting contaminated from outside sources. That this contamination does take place is demonstrated by the fact that organisms other than those experimented with are sometimes found in the subculture tube.

THE LANCET Commissioners also pointed out that according to their method no disinfectant had a higher carbolic acid coefficient than about 13. The probable explanation of this is, again, the fact that a larger dose of organism is added with their spoons than with the platinum loop. Also when working with the separating flask a lower coefficient is obtained than by the Rideal-Walker method as performed in the usual way.

I have recently contrived a small apparatus which works very successfully. By its employment there is no fear of contamination from the air, a large dose of the organism is added, no platinum loops or spoons are required, and the test can on the whole be expeditiously carried out. The apparatus consists of a small glass separating flask; the part above the stopcock is open to the air, cylindrical in shape, 3 in. long, and nearly 1 in. in diameter; the stem below the stopcock is narrowed down to a very fine point, so that only a very small drop of fluid can escape. The top is kept plugged with cotton-wool (which is only momentarily removed to enable the disinfectant to be added); and on making an experiment the requisite number of these small appliances are sterilised and clamped to a stand. One drop of the typhoid broth is then added, followed by 1 c.c. of the disinfectant solution; and if the worker thinks it necessary he may mix the contents by stirring with a platinum loop. The subculture tubes are inoculated at the proper intervals of time by turning the stopcock, allowing one drop to fall into the tube, and then gently shaking the tube.

When the experiment is finished the whole of the small apparatus may be washed through with a dilute acid, then thoroughly washed in water, the stopcock smeared with glycerine (not vaseline) to make it turn easily, re-plugged, and again sterilised in the hot-air oven, after which they are arranged ready for use.

It may be argued that the addition of as much as one drop of the mixed culture and disinfectant might include an amount of disinfectant which would inhibit growth in the subculture tubes; this, however, is not the case when culture tubes are employed containing about 10 c.c. of medium.

[1] THE LANCET Commission on the Standardisation of Disinfectants. See THE LANCET, Nov. 13th, 20th, and 27th, 1909.

NOTE ON LEISHMANIA AND MOSQUITOES:

THE LEISHMANIA DONOVANI CAN LIVE AND DEVELOP IN THE INTESTINAL TRACT OF THE ANOPHELES.

BY PROFESSOR GIUSEPPE FRANCHINI.

From the Anolin Laboratory of Spedale Maggiore of Bologna, directed by Professor G. VANNINI.

CONSIDERING the great lacuna still existing in our knowledge of the transmitting agents of Leishman's bodies, and considering the negative results obtained from experiments on cimex lectularius, pulex irritans and serraticeps, and pediculus capitis, as I have shown elsewhere, it was evident that our studies must turn to other blood-sucking insects. Starting from the fact that kala-azar often develops in malarial countries, I wished to begin my researches on mosquitoes, choosing the anopheles species (claviger variety)—that is to say, the same which has already been shown capable of transmitting human malaria.

The mosquitoes I chose came from the malarial zone of the province of Ferrara, and in a small part from that of Bologna. These were placed in vases at the bottom of which was a stratum of culture from 10 to 15 days old, pure and well developed, about as thick as a penny. Upon this was spread a disc of thick gauze adhering to the culture material. In this manner the insects could suck the culture through the gauze without contaminating it with their feet and wings. Some others, after having had the extremities of their wings cut off, were put into contact with culture placed on a moveable object glass. In the long series of experiments I could see for certain that some of the mosquitoes had fed upon the culture, because externally a sort of pink swelling was visible projecting beneath the insect's abdomen immediately below the restriction which separates the thorax from the abdomen. It was evidently a question of the so-called "ventricolo succhiatore" dilated by the liquid of the culture. The mosquitoes were then put under large glass bells and left there till their death, which took place at the most within 60 hours.

With the insects which had been in contact with the culture after half an hour, and after 1, 2, 3, 6, 8, 12, 16, 24, 36, and 48 hours, preparations, fixed in methyl alcohol and coloured with Giemsa, were made for smearing. It is needless to say that before smearing the mosquitoes had been frequently and carefully washed. Some of them were imbedded and sectioned, and I made many preparations to compare the smears and sections. I assured myself also that the leishmaniæ outside the culture tubes could live for a quarter of an hour, half an hour, and longer; and with the cultures I made smears to see which were the prevalent forms. After ½–2 hours

Series I.

FIG. 1. FIG. 2. FIG. 3. FIG. 4.

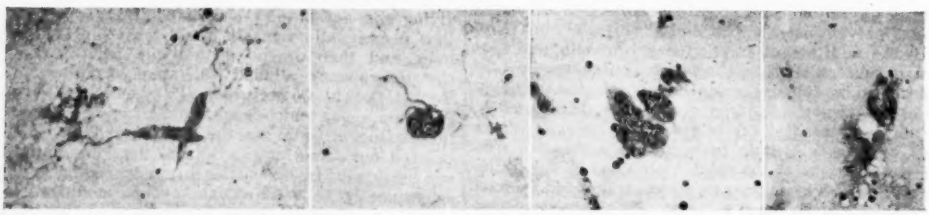
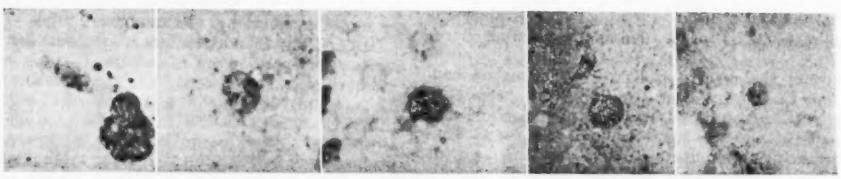


FIG. 5. FIG. 6. FIG. 7. FIG. 8. FIG. 9.



Explanation of the Figures.—Figs. 1 and 2 represent flagellated leishmaniæ of the digestive tube of the mosquito within the first three hours. Fig. 2 is evidently about to divide. Fig. 3 after about five hours; in one leishmania a slight flagellum is still evident. Figs. 4 and 5, aflagellated leishmaniæ of the elongated form met with within the 12 hours. Figs. 6, 7, 8, and 9, leishmaniæ of different dimensions with very clear nucleus and blepharoblasts and chromatic granulations met with within the 24 hours. All the microphotographs have been taken with a two-millimetre Zeiss objective, aperture 1·30, homogeneous immersion, and a Zeiss compensating eyepiece No. 4. Length of tube 160 millimetres. Bellows of the apparatus opened to 43 centimetres.

Series II.

FIG. 1. FIG. 2. FIG. 3.

Fig. 1. Magnification as Series I. Fig. 2. Compensating eyepiece No. 12 was used. Fig. 3 represents two illustrations made with a Zeiss microscope, homogeneous immersion—the first with compensating eyepiece No. 4 and the second with compensating eyepiece No. 8. They represent forms of small Leishman bodies with nucleus and blepharoblast as in the organs of patients suffering from kala-azar, and as met with after 24, 36, or 48 hours.

I could observe in the smears from the intestine numerous leishmaniæ in great part flagellated with well-coloured protoplasm, nucleus, and blepharoblasts. In some rare forms the pale protoplasm presented vacuoles, some were in division, presenting two flagella, protoplasm with large well-coloured granulations, two nuclei, and two very clear blepharoblasts. In from 5–8 hours the flagellated forms were very rare, and where they existed the flagellum was short and the leishmaniæ had taken in part a more globular form, but without signs of degeneration. After 10–12 hours the Leishman bodies were less and less common, with light blue protoplasm and well-coloured nucleus and granulations and without flagella. Near these, other forms were evidently degenerating. After this period of time I have never seen elongated forms of leishmaniæ, but roundish ones, some big, others smaller, very rare, with visible nucleus and blepharoblasts, and with grains of chromatin. After 24–36–48 hours I was able to observe small forms, still very scarce, with nucleus and blepharoblasts of the identical form and structure of Leishman's parasites which are met with in the hematopoietic organs of those suffering from kala-azar illness. I made some smears with the dejecta of mosquitoes which had certainly sucked the culture for a relatively short time, and in two preparations I met with two typical leishmaniæ of the elongated form, sufficiently well preserved but without flagella. The above experiments were made at a temperature which varied from 28° to 30° C.

In conclusion, I claim that the leishmania donovani can live and develop in the digestive tube of the anopheles, at least in those of the above-named districts. I think I can affirm this, because if it were not so the parasite would be destroyed in a short time by the digestive juices of the mosquito and by the numerous bacteria. The leishmaniæ themselves, on culture outside the tubes and in their own liquid, although protected from their external surroundings, only live for a short time. Smears of bugs and fleas (dog fleas and human fleas) which had certainly sucked, when fixed and coloured, even after a quarter to half an hour, have not presented any form which could resemble leishmaniæ even from afar. They were evidently destroyed as soon as introduced. My experiments on this subject have been recently confirmed by Basile of the laboratory of Grasse. That leishmaniæ could develop I deduce from the most varied forms observed in preparations of mosquitoes, making comparisons with the smears from the cultures. Moreover, in cultures of 10–15 days there could not be the small forms which I met with after 36–48 hours, and which appear only in tubes of very old culture.

These results appear to me of great importance if we remember that the "flora batterica" is very abundant in the digestive tube of the mosquito, and that the leishmania donovani in culture *does not develop if the medium is contaminated, nor can it live long when any contamination supervenes in an already well-developed culture.* Note again the tendency of the leishmania shortly after its introduction into the mosquito to lose the flagella and become aflagellated like the forms which live in human organism.

I wish these researches of mine to be made known because they are new and may open a fresh field of inquiry on the agents (insects) which transmit kala-azar. These, in short, are the results I have obtained; other studies are requisite, and, in part, have already been begun. It is necessary, in order to determine in which part of the digestive tube the leishmaniæ live best and undergo modifications, to inject emulsions of infected mosquitoes into animals, and to put these in cages with close metallic network together with susceptible animals. By putting the mosquitoes in larger spaces than those I employed, and by feeding them also with blood, it will not be difficult to make them live longer than I succeeded in doing.

UNIVERSITY OF SHEFFIELD.—The Council at its meeting on Oct. 27th made the following appointments: (1) Mr. Percival E. Barber, B.A., M.R.C.S. Eng., L.R.C.P. Lond., to the Professorship of Midwifery; (2) Mr. Miles H. Phillips, M.B. Lond., F.R.C.S. Eng., to the post of Lecturer in Gynæcology; (3) Mr. Mackenzie Douglas, M.A., M.D. Edin., to the post of Junior Demonstrator in Pathology; and (4) Mr. P. F. Kendall, B.Sc., to the post of Assistant Curator of the Zoological Museum. At the same meeting Emeritus Professor R. J. Pye-Smith was appointed to represent the University on the General Medical Council.

DRILL AND DEVELOPMENT: A PLEA FOR UNIVERSAL MILITARY TRAINING.

BY LEONARD B. CANE, M.D., B.C. CANTAB., M.R.C.S. ENG., L.R.C.P. LOND.,

LIEUTENANT, ROYAL ARMY MEDICAL CORPS (TERRITORIAL FORCE); SURGEON ATTACHED TO INNS OF COURT OFFICERS' TRAINING CORPS; ASSISTANT PHYSICIAN TO THE PETERBOROUGH INFIRMARY.

THE value of organised drill and discipline has long been recognised in our public and national schools, and has recently received additional acknowledgment from those responsible for the formation and rapid growth of lads' brigades, boy scouts, and similar organisations. That these are of benefit in developing the physique and to some extent the characters of their members is undoubted; in fact, were it not so it would be difficult to account for the widespread support they have received from all quarters. Such results must be attributed, not only to the healthy exercise which is so prominent a feature of the training, but also to some extent to the organised drill and the habits of obedience and collective action which are thereby acquired, and which cannot fail to have some influence upon character in after-life. Mr. J. L. Hughes, who as inspector of schools in Toronto has had for more than 30 years exceptional experience in noting the effects of drill in the Toronto Schools, considers that "during their period of adolescence boys' moral natures may be developed by drill more definitely than by any process of teaching. ..... It develops them physically, and gives them freedom and grace of step, and a manly and dignified bearing. It trains them to be responsively obedient and ..... defines in a boy's mind a consciousness of the need of coöperation. ..... Drill makes boys executive, and executive training is the highest training. I sincerely hope," he writes, "that the boys of the whole Empire may be encouraged in every legitimate way to learn military drill for their own development, and to qualify themselves for their duty as citizens."[1] To ensure the best results, however, organised drills and other training of a military nature should be incorporated in the school course and be made compulsory on all. Otherwise the training will too often be avoided by just those weaklings who require it most. Its permanent value would be greatly increased if every boy on leaving school and before settling down to earn his living had to pass through several months of camp training on lines similar to those laid down for the Territorial Army. All who have had charge of the health of Territorial units must have been favourably impressed by the great improvement in health noticeable after only a fortnight's training, and many must have regretted that similar opportunities were not open to all. The extension of physical drill systems in schools, followed by a short period of military training for all youths of sound physique, would do much to raise the standard of national health, and arrest the acknowledged tendency towards physical deterioration.

The object of this brief article is to show, without reference to detailed statistics, the immense improvement in development that may be expected from even a few months' military training, and to strongly advocate that some such system should be universally adopted in this country. It will be shown that even a few months' training results in marked improvement, not merely in muscular growth but in weight, chest measurement, and general development, and it is clear that such progress must be accompanied by strengthening of the whole body and increased resistance to disease. "Military service," writes Dr. Erich Wellmann, "improves and hardens the physical condition and the efficiency of recruits, puts an end to habits injurious to health, and gives the soldier who passes into the reserve the stamp of a strong, healthy, and agile man. Thus the individual soldier has his health improved, and through him the improvement is communicated to the nation."[2]

In this country but few opportunities for noting the effects of a short course of military training upon large numbers of men have hitherto been available. The following brief extracts from various British and foreign sources may, however, serve to indicate some of the results that may be expected. In 1906 the *Spectator* raised an "experimental company" of 100 men for a six months' course of military training. The men were selected almost at random, and "represented all classes of the community. There were two

sons of clergymen, one yeoman farmer, one son of a shopkeeper, several clerks and shop assistants, three club servants, one stevedore from the London Docks, one sailor, sundry artisans, and a large majority of labourers. The average age on enlistment was 19 years and 10 months, the ages ranging from barely 17 up to 24. The average height on joining was 5 ft. 7¾ in., the chest measurement 35 in., and the weight 134 lb. At the end of the course the average height was 5 ft. 8¼ in., the chest measurement 36¾ in., and the weight 140½ lb. Hard work during the very hot weather brought down the weight, which at the end of three months had been 142 lb."[3] More recently some recruits who had joined together were measured on enlistment and again after eight weeks' training. The results in every case showed an improvement, the increase in height varying from ½ to ½ in., in weight from 11 lb. to 16½ lb., and in chest measurement from ½ in. to 1¼ in.[4]

At the annual meeting of the British Medical Association in 1904 some instructive statistics from foreign sources were given by J. Ellis Barker,[5] which showed conclusively the excellent results obtained in comparatively short periods of military training. In the German Army 392 men were measured on four occasions—on enlistment, and after four, 7½, and 12 months' service. The increase in capacity of the lungs after successive periods of training was remarkable; on joining the army 16·6 per cent. were found to have a lung capacity of from 2000 to 3500 c.c.; 67·3 per cent. with capacity from 3500 to 4500 c.c.; and 16·1 per cent. with capacity of 4500 c.c. and over. At the end of four months' service the percentage of men with lung capacity of less than 3500 c.c. had fallen to 9·9 per cent, with a corresponding increase in number of men with larger lung capacities, 70·4 per cent. having from 3500 to 4500 c.c., and 16·8 per cent. from 4500 c.c. upwards. After seven and a half months' service this improvement was continued, only 8 per cent. of the men having still the low capacity of from 2000 to 3500 c.c., whilst those with capacities of 4500 c.c. and over had risen from 16·1 per cent. (on joining) to 26·4 per cent. After this period additional progress was but slight, the proportion of men in the three classes at the end of the year being approximately that found after seven and a half months.[6]

In the French army similar measurements taken by Dr. Frilley (6435 men) showed that after only six months the average height had increased by 0·1 in., the weight by 3¼ lb., and girth of chest by ½ in.[7] In the Japanese Army detailed annual statistics show clearly that the greatest improvement takes place during the first year of service, and that after that period there is but little further progress.[8] In the United States detailed measurements of recruits at Columbus Barracks show the following changes after a course of about three and a half months' instruction: average gain in weight, 2·81 lb.; average gain in chest expansion, 0·6 in.; average gain in size of chest inflated, 0·65 in.; also increase in size of muscles of the arm, and a diminution in waist measurement.[9]

These and similar extracts show conclusively that even a few months' military training is responsible for definite and well-marked progress in physical development. Not only this, but the enforced discipline and regular habits cannot fail to be of benefit and to prove of distinct value in after life. Dr. A. Shadwell, in "Industrial Efficiency" (vol. ii., p. 406), referring to the universal service in Germany, states that he has "met with no two opinions about its educational value to the individual and its industrial value to the nation. Perhaps the most striking effect is the physical benefit derived from the exercises, drill, gymnastics, and regular life. It turns a weedy anæmic lad into a well-knit, upstanding young man with sound organs and well-developed limbs. It further teaches him cleanliness, discipline, order, authority, self-respect, and respect for others. The effect in the workshop is visible at every turn. It is not too much to say that military service has been in a great measure the making of industrial Germany. Employers and employed have gone through it together; they have learned in the same school, and they equally understand that order is essential to every organised force, industrial as well as military."[10] It is interesting to note that at Krupp's work at Essen a man who has been through his training earns 2*s.* a week more wages than one who has not. As Blatchford says, "A training which produces such results is good for any youth, and the nation would be richer materially and morally if every English boy could be so trained."[11]

The very moderate proposals brought before the House of Lords by Lord Roberts in July, 1909, would if adopted be quite sufficient to ensure a lasting improvement in national physique with consequent increase in mental and moral fitness, and capacity for work in all classes of the community. The National Service Bill provides for a *single* continuous course of from four to six months' training for every able-bodied youth between the ages of 18 and 21 (with certain necessary exceptions), to be followed in the next three years by a fortnight's training in camp with the Territorial Army (and liability up to the age of 30 to be called out for home defence only in case of national danger).

With the military aspects of this scheme it is not my purpose here to deal. Suffice it to mention that it is estimated that about 150,000 youths would be available for training every year, so that in a few years' time we should have prepared a potential army of a million men for home defence. From a health point of view, however, I am convinced that in universal military training we should find a partial solution to one of the greatest problems of to-day; and that with its introduction into this country an effective check would be given to the progressive deterioration in national health. The definite increase in weight, strength, and lung capacity which I have shown may be expected would be accompanied by general improvement in health and power of resistance to disease, and at the same time habits of discipline, cleanliness, and healthy living would be acquired, which in many cases would persist throughout life and prove of permanent value both to the individual and to the state.

It is to emphasise the value of compulsory drill in schools and to advocate the adoption of universal military training in this country that this article has been written.

Bibliography.—1. J. L. H. Hughes: Letter dated June 17th, 1907. 2. Dr. Erich Wellmann: Abstammung, Beruf, und Heeresersatz, p. 8. 3. Colonel Pollock: Nation in Arms, January, 1911; see also Spectator, Oct. 13th, 1906. 4. Nation in Arms, February, 1911. 5. J. Ellis Barker: National Service and National Physique. 6. Dr. Fetzer: Ueber den Einfluss des Militardienstes. 7. Dr. Frilley: Archives de Médecine et de Pharmacie Militaires, Paris, vol. ix., No. 2. 8. Journal of the Royal Army Medical Corps, April, 1905, p. 535. 9. Butts (quoted by Munson): Theory and Practice of Military Hygiene, 1901, p. 42. 10. Dr. Shadwell: Industrial Efficiency, vol. ii., p. 406. 11. Robert Blatchford: My Life in the Army, p. 127.

Peterborough.

Medical Societies.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

Two New Major Operations.—Exhibition of Cases and Specimens.

THE first meeting of the session was held on Oct. 20th, Mr. H. LITTLEWOOD, the President, being in the chair.

The PRESIDENT delivered an address, taking as his subject Two Major Operations devised by himself—namely: (1) interscapulo-thoracic amputation; and (2) supra-trochanteric amputation of the femur. 1. The interscapulo-thoracic amputation differed entirely in principle from Professor Berger's operation, in which the subclavian vessels were ligatured as a preliminary step; in the operation now described the vessels were exposed and secured as they were met with during the course of the operation. A cervico-scapular flap was first turned back, the scapula and the muscles attaching it to the spine were exposed, and the muscles divided. The clavicle was next divided near the sterno-mastoid attachment by a Gigli's saw. The whole limb now fell away from the trunk, putting the brachial plexus and the subclavian vessels on the stretch, so that they stood out and could easily be seen. The brachial plexus was divided with scissors, and first the axillary artery, then the vein, was clipped with forceps and divided. The anterior or pectoro-axillary flap was now cut and reflected as far forwards as necessary, the pectorales were divided, the fore-quarter was removed, and the flaps were sutured. Mr. Littlewood had performed the operation in 25 minutes. He claimed that it was a much shorter and easier method than Berger's operation. 2. Supra-trochanteric amputation of the femur, which could either be done for trauma or sarcoma of the lower end of the femur, was

performed in the following manner. The patient was brought to the top of the table, resting on the sound side. Two flaps were cut, an antero-internal and a postero-external, the length of each corresponding to one-third of the circumference of the hip-joint. The antero-internal was first marked out and turned up for about two inches, and the femoral vessels were exposed and ligatured. The muscles were divided and the neck of the femur was exposed. The postero-external flap was next cut and the muscles were divided; last of all those attached to the great trochanter. The capsule was stripped up from the anterior intertrochanteric line for half an inch without opening the hip-joint. A Gigli's saw surrounded and divided the neck of the femur close to the inner side of the trochanter. The limb was now removed. The smaller vessels were secured as soon as they were divided. It was suggested that this operation should be performed in certain cases instead of the regular amputation at the hip-joint, a moveable, and so more useful, stump being formed; it was also thought the shock might be less. Recurrence after sarcoma generally took place in internal organs and not in the stump. It was not likely to recur in the head and neck of the femur, the bony parts left in this operation. In the cases operated on in this way there had never been any recurrence in the stump. The operation was first performed in 1897. Mr. Littlewood strongly advocated the method of securing the main vessels at the point of division in forming the flaps and deprecated the use of tourniquets. The subject of shock was fully discussed, and the ethics of performing major operations in difficult and doubtful cases were considered. Two patients were shown on whom the operations had been performed.—A vote of thanks was proposed by Mr. PRIDGIN TEALE, seconded by Dr. A. G. BARRS, and supported by Mr. LAWFORD KNAGGS.

Dr. BARRS showed a case of Acute Infective Poliomyelitis in a boy aged 16. All four limbs were involved in a complete loss of use without sensory disturbance, but with total loss of reflexes. The faradic reaction had not disappeared at the end of a month, and would probably not now be lost.

Dr. T. WARDROP GRIFFITH showed a case of Poliomyelitis with Paraplegic Distribution of the Palsy in a man of about 24. The symptoms had been ushered in by pains, and there had been some transitory affection of the sphincters. There was complete palsy of the lower extremities without any vestige of sensory affection; the muscles were flaccid, the reaction of degeneration was present, and the deep reflexes absent. Attention was called to the alarming frequency of these cases during the last few years, to the fact that many of them had occurred in groups, and to the gravity of the prognosis. The distinction from paraplegia due to a non-discriminating myelitis was dwelt upon.—Dr. T. CHURTON said that the advantage of recognising the disease in its early stage—the second or third day—would be the isolation of the patient until all possible danger of infection was past, and also that the proposed treatment by urotropine might be put in force in the acute stage. In febrile cases occurring in young children the limbs should be closely observed by the nurse during washing operations.

Dr. GRIFFITH also showed three specimens in illustration of Combined Cardiac Valvular Lesions. The cases had been carefully watched during life, and the rhythm of the heart and the character of the venous pulse in the case of two of them showed that the condition of auricular fibrillation had been present. The influence of digitalis, the use of which had for long been of marked benefit in slowing the cardiac action and in inducing the occurrence of coupled beats, the second of which did not reach the wrist, was well demonstrated by the tracings of the venous pulse.

Dr. CHURTON showed a case of Disseminated Sclerosis of Oppenheim's Sacral Type, with anæsthesia in the second sacral root area, in a man aged 47.

Dr. C. OLDFIELD showed a patient on whom a New Radical Cure Operation for Prolapse of the Uterus had been performed. The patient was a healthy woman, 64 years of age, who had suffered for many years from complete genital prolapse. A pessary no longer gave her relief, and she pressed for radical treatment. None of the ordinary operations for this condition appeared to be suitable, and so a new operation was designed. After complete resection of the uterus and vagina, followed by shortening of various ligaments of the uterus and vagina and the uniting of corresponding ligaments of the two sides, the margins of the levatores ani were sutured from just behind the urethra as far back as the anus, and finally the superficial muscles and fasciæ were approximated. No shock or trouble of any kind followed, and the successful immediate result, with a substantial and unyielding pelvic floor, suggests that the patient has obtained a true radical cure.

Cases and specimens were also shown by Mr. H. COLLINSON (with Dr. J. B. HELLIER), Dr. ALEXANDER SHARP, and the PRESIDENT.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held at Liverpool on Oct. 20th, Dr. J. B. Hellier, the President, being in the chair.—Dr. Hellier related the history and showed the specimen of a case of Carcinoma of the Cervix, complicated by pregnancy and treated by abdominal panhysterectomy. The operation necessitated the division of one ureter which was subsequently implanted in the bladder. The patient made a good recovery.—Dr. W. E. Fothergill (Manchester) described the case of a patient whose first pregnancy ended in early abortion. Early in her second pregnancy abortion was threatened, and it was found that the uterus contained three fibroids, one on either side and one behind, which occupied the pelvic cavity. At the sixth month there was an attack of pain and fever. The pregnancy continued, however, until within a week of time, when the membranes ruptured without the onset of labour. The child was delivered with forceps after manual dilation, and after the fibroid which occupied the pelvis had been pushed up. The patient's pulse and temperature remained normal for six weeks after the confinement, when pain, fever, and vomiting occurred. Supra-vaginal hysterectomy was done, and the fibroids were all found to contain pus. Dr. Fothergill also showed the corpus uteri and both appendages removed from a virgin, aged 42, by the abdominal route on account of pain of long standing and hæmorrhage which remained excessive after curetting. The organs were buried in adhesions, and the patient's old pelvic peritonitis doubtless dated from an attack of appendicitis with suppuration, which was relieved by operation in 1902. The uterus contained a fibroid polypus of the size of a hazel nut, which accounted for the hæmorrhage. Its existence was not suspected.—Dr. Arnold W. W. Lea related a case of Fibromyoma which obstructed labour at full term in a multipara, aged 36, with a history of four previous deliveries. She was admitted to hospital during labour, the membranes having ruptured. The cervix admitted two fingers, but was pressed back to the sacrum by a large myoma occupying the pelvis and reaching to the level of the umbilicus. The child lay in the upper portion of the uterus. As delivery through the vagina was impossible Cæsarean section was carried out, followed by supra-vaginal hysterectomy. The child was living and weighed 6½ lb. The patient made an uneventful recovery.

MEDICO-CHIRURGICAL SOCIETY OF GLASGOW.—A meeting of this society was held on Oct. 20th.—Dr. R. Barclay Ness showed a boy, aged 10 years, who during the past ten months had suffered from an unusual series of manifestations of acute rheumatism. Eight weeks before admission to the Western Infirmary he had had a mild attack of rheumatic arthritis affecting the larger joints of the arms and legs, and five weeks later subcutaneous nodules appeared in various situations. On admission in February last these nodules were found to be the fibroid nodules commonly associated with the rheumatism of childhood; they were situated in the neighbourhood of the small joints of the hands and of most of the larger joints of the arms and legs, and in the occipital region. In the latter site they were as large as green peas; elsewhere they were much smaller. The boy also presented evidence of endocarditis. He was dismissed apparently well, except for a valvular lesion, at the end of March. A month later he was readmitted with severe chorea accompanied by another crop of nodules similar to the first. Two months later, when still in bospital, he developed pericarditis and left-sided pleurisy, with reappearance of nodules a little later. This illness almost proved fatal, but by the end of a fortnight all immediate danger from the pleurisy and pericarditis was over. His convalescence was interrupted on two occasions, when he was allowed out of bed, by a slight return of the chorea. The nodules reappeared towards the

end of August and had persisted since then, though gradually diminishing in size. The chief interest of the case lay in the long series of rheumatic manifestations, which included within ten months articular rheumatism, subcutaneous fibroid nodules, endocarditis, pericarditis, pleurisy, and chorea.—Professor R. Stockman, in a paper on the Vaccine Treatment of Gonococcal Arthritis, reviewed the literature on the subject, from which it appeared that while some observers had written enthusiastically of the curative results of vaccine treatment in all forms of gonococcal infection others had found it valueless. He then reported the results obtained by vaccine treatment in nine cases of urethritis or vaginitis with arthritis. The gonococcus was isolated in every case, and autogenous vaccines were mostly, but not exclusively, used. In all cases the treatment was at first exclusively by the vaccine, but in most cases no distinct improvement followed, and ordinary local treatment was added or substituted. This was always followed by immediate and distinct improvement in the local and general conditions, and to it cure was finally due. In only one case did recovery take place under vaccine treatment alone, but improvement was so rapid and marked after only one dose of 5 millions as to be hardly attributable, in view of the results in the other cases, to the vaccine. In two cases fresh joints became infected while the vaccine treatment was being given, which should not have happened had the vaccine been capable of conferring immunity or even of increasing substantially the resistance to infection. Comparison of these results of vaccine treatment with the results of ordinary treatment by means of copaiba given internally and local applications led to the conclusion that the administration of dead gonococci exerted no curative influence on gonococcal arthritis. The reaction that followed a sufficient dose of vaccine could be used as a method of diagnosing gonococcal infection, but its variability seriously impaired its value.

MEDICO-PSYCHOLOGICAL ASSOCIATION.—The autumn meeting of the Northern and Midland Division of this society was held at the kind invitation of Dr. E H. O. Sankey at Boreatton Park, Baschurch, Salop, on Oct. 19th, Dr. Dawson, the President, being in the chair.—Dr. Pierce, in a paper entitled "Some Remarks on the Diploma in Psychological Medicine," pointed out that four universities—Edinburgh, Durham, Manchester, and Leeds—had already instituted a diploma in psychological medicine and that others were seriously considering the subject. After giving a brief *résumé* of the curriculum required at the various schools, he said he thought it might safely be concluded that the new diploma had come to stay, and would in time take a position corresponding to that held by the D.P.H. He went on to show how the new departure would affect those engaged in the treatment and care of the insane, improving their status. At present the position of assistant medical officers in asylums was highly unsatisfactory, many of them being obliged to live celibate lives and having little or no recognised legal status. He thought the association should point out to county councils and others engaged in lunacy administration the importance of the diploma.—An interesting discussion followed, in which the President, Dr. Sankey, Dr. White, and others took part. The general feeling was one of agreement with the points brought forward in the paper.—Dr. Sankey then read a short paper introducing the subject of the Treatment of Acute and Early Cases of Insanity, with special reference to the number of patients in asylums. He was forcibly struck, he said, with the fact that the recovery rate was nearly stationary. He considered that asylums were too big, and that in future building should be in the form of hospitals or receiving houses for acute or curable cases; that all cases should be first admitted to these, and that the failures and incurable cases only should be transferred thence to the asylum. He thought that the smaller number of patients under care with a large medical and nursing staff would result in more recoveries.—Dr. White, Dr. Cox, and Dr. J. Middlemass took part in the discussion, and reference was made to the fact that some large county asylums had hospitals for acute cases attached to them.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.—The committee of management has arranged for the reception of paying patients at the Northwood sanatorium. Applications should be made to the secretary, at the offices, 7, Fitzroy-square, London, W.

Reviews and Notices of Books.

Biographical Reminiscences of Sir Samuel Wilks. London: Adlard and Co. 1911. Pp. 200. Price 3*s.* 6*d.* net.

Sir Samuel Wilks, one of the most widely known and deeply respected of the veteran leaders of our profession, has written in his biographical reminiscences, which have just been published, a memoir of a very interesting and, as might be expected from the personality of its author, of a very original sort. The memoir does not aim to give a mere personal account of the author, indeed, the purely autobiographical record is all contained in three short pages. It is rather, what the author terms it, his medical history; that is to say, that Sir Samuel Wilks has recorded the personal part which he has played in the development of medicine during an active career as hospital physician and consultant authority between the years of 1851, when he took the Membership of the Royal College of Physicians of London, and 1901, when he retired from the practice of his profession full of honours at the ripe age of 77. The 50 years over which his biographical reminiscences extend, we need hardly point out to our readers, were years of continuous progress in scientific medicine, and especially has that progress been made in the direction of morbid anatomy. The microscope, for example, was not used for the benefit of medicine and in the diagnosis of disease until shortly before Sir Samuel Wilks became a medical student, and then only in a limited manner. We are inclined to forget, having regard to the part played by the microscope in the study of modern bacteriology, that what we should now term quite coarse pathological changes were absolutely misunderstood or unrecognised before the use of the microscope became a matter of clinical routine, and that until this use was established the meaning of perfectly obvious pathological processes was unrevealed to medicine. Sir Samuel Wilks's method in writing this book of his personal medical biography has been to go steadily through the Guy's Hospital Reports, and through our columns and those of our contemporaries, and observe firstly how far he had a personal knowledge of any interesting conditions recorded, and secondly (although he is too modest to say it in so many words), how far his own work in ward or post-mortem room led to accepted conditions of medical knowledge. We can see throughout that he was in some of our most important pathological departures a vigorous and clear-sighted pioneer. In the special references which he makes to certain cases of Bright's disease, Addison's disease, Hodgkin's disease, pernicious anæmia and syphilis, his method has been to select from the Guy's Hospital Reports cases recorded by various distinguished members of the staff—for example, the great Bright, Astley Cooper, Wilkingson King, Bransby Cooper, Golding Bird, Norman Chevers, Addison, Gull, Hilton, Pavy, and S. O. Habershon. In all the pathological conditions of these cases, many of which at the time that the notes were taken must have been quite obscure, Sir Samuel Wilks had something to say that was entirely original, and whether the researches started with himself, or whether they owed their origin to the acumen of his colleagues, his comments are equally uncompromising as well as illuminating.

He records the work which he himself did on the syphilitic affections of the internal organs as the most noteworthy, and in the end the most fruitful of his observations. It must be remembered that when Sir Samuel Wilks joined Guy's Hospital as a student, although post-mortem examinations were made for the purpose of ascertaining the nature of the disease from which the patient had died, the number of such examinations was much smaller than that made now,

while the autopsies were conducted far less thoroughly and without the same intention to found upon them a scientific system or to collate any findings with investigations undertaken at other times or places. The autopsies were made as a rule only in isolated instances of what appeared to be specially interesting cases; the result found on the post-mortem table was regarded as the answer to a difficult question that had been set in the wards, and the physician went to look at what the pathologist had to show him in much the same spirit as that in which a boy, having done a sum, looks at the end of the book to see if he has solved the problem aright. But Sir Samuel Wilks, who at the very outset of his career at Guy's Hospital felt himself attracted towards the subject of morbid anatomy because it offered something more positive than did the symptoms of disease, regarded no time as wasted which was spent in the post-mortem room, if only because the sedulous and systematic comparison of clinical symptoms with post-mortem discoveries must be the way of all ways to produce accurate treatment upon broad lines. As showing how much work remained to be done when he began his medical career, he records that when he first examined the body of a man who had died from syphilis he could find no account in medical literature of such an examination having been previously made, while the results of the necropsy were a complete revelation to himself as he had never expected the internal organs of a body could be affected in the manner that later came, largely through his work, to be described generally as lardaceous degeneration. A very interesting passage in the book refers to a paper published by the author in 1856 on "Lardaceous Disease and Some Allied Affections," the subject being pursued some nine years afterwards in a communication connecting the lardaceous condition with the cachexia of protracted bone trouble. The alliance of these conditions had been previously pointed out by Thomas Hodgkin in a paper read before the Royal Medical and Chirurgical Society in 1832, and when Wilks was credited with a new discovery he alluded to Hodgkin's paper, and was responsible for affixing Hodgkin's name to the condition known as Hodgkin's disease.

We have said enough to show that Sir Samuel Wilks's professional reminiscences contain matters of interest, not only to all pathologists, but to all members of the medical profession who like to regard their work in a philosophical spirit, to trace its progress, see its errors, and note the manner in which real success follows intelligent failure, and in which grave disappointment waits upon hasty presumption. We have here the notes of an actual observer upon Jenner's classical differentiation between typhus and typhoid fever, with a contribution by the author to the perfecting of this distinction; an excerpt from what Sir Samuel Wilks believes to be the first paper ever written upon excision of the joints (the paper was written for the Guy's Hospital Reports for 1833 by a Mr. Blackburn, a pupil of Aston Key); a description of four cases of cæcitis, showing that the condition now generally, and as Sir Samuel Wilks suggests inaccurately, known as appendicitis, had been well described by Addison in 1836—Sir Samuel Wilks considers Addison's account as excellent as any to be found in modern treatises; some interesting remarks upon the tests for albumin in urine; notes on Addison's disease, Hodgkin's disease, pernicious anæmia, Jacksonian epilepsy, and phosphorus poisoning, and records of the only two fatal cases of nicotine poisoning reported in this country.

We do not attempt to give the contents of this fascinating book in more detail; many of our readers will assuredly read it for themselves with profit, interest, and amusement. If a further edition is called for we plead for the inclusion of an index. It is true that the book only contains 200 pages, but the pages are closely packed.

Municipal Chemistry. Edited by CHARLES BASKERVILLE, Ph.D., F.C.S., Professor of Chemistry and Director of the Laboratory, College of the City of New York. New York and London: McGraw-Hill Book Company. 1911. Pp. 526. Price 21*s.* net.

THIS is a very interesting book containing a series of 30 lectures by experts on the application of the principles of (chiefly) chemistry to municipal matters.

The lectures were delivered at the College of New York City last year, and the course was authorised by the Honourable Board of Trustees of the College, the public being invited to attend. Each lecturer was an admittedly distinguished exponent of the subject, and the ground covered proved so interesting that it was decided to collect the lectures for publication in book form. Where no preparation had been made for publication especially prepared articles on the subject of the lecture were substituted. The result is, as we have said, a very interesting book, dealing with matters of the greatest importance to the citizen. The editor contributes an admirable article on Sanitation and the City; Dr. Pitt Mason, in two articles, deals with Drinking Water and Disease, and Purification of Water; Mr. Douglass Flinn writes on Municipal Water-supply; Dr. Thomas C. Darlington on Milk; Dr. Harvey Washington Wiley on Food Adulteration; Mr. William Allen Hamor on Food Inspection; Dr. Virgil Coblentz on Drugs and their Adulteration and Methods of Detecting Adulteration; Dr. Lyman F. Kebler contributes an article full of common-sense writing on Habit-forming Agents. Then follow Streets and their Construction and Modern Road Construction, both by Dr. Allerton S. Cushmann; Street Sanitation, by Mr. William H. Edwards; Methods of Street Cleaning, Waste Disposal, by Edward D. Very; the Disposal of City Sewage, by C. A. E. Winslow; Making Illuminating Gas and the Valuation of Illuminating Gas, by Dr. Arthur H. Elliott; the Smoke Problem, by Dr. Payn B. Parsons; Ventilation, by Dr. Herbert R. Moody; the Chemistry of Personal Hygiene, by Dr. Thomas A. Storey; Textile Materials and their Service to Man, by Louis A. Olney; Combustibles and Explosives, by A. A. Breneman; Paint, Iron and Steel, Cement and Concrete, by Maximilian Toch; and Parks, Gardens, and Playgrounds, by Dr. Nathaniel Lord Britton.

We have not met with a more interesting collection of authoritative opinions on these special problems of the city. The way in which medicine, chemistry, and engineering are coping with numerous problems under each of these headings is admirably exemplified throughout the pages. The work is a very practical and important contribution to the sanitary sciences.

Essays and Clinical Studies. By F. G. CROOKSHANK, M.D. Lond. London: H. K. Lewis. 1911. Pp. 245. Price 7*s.* 6*d.* net.

IN these days of systematic text-books, statistical articles, and experimental research, the art of essay-writing upon matters of clinical interest is in some danger of becoming a lost one. Dr. Crookshank has collected together in this little book a number of essays which he has published at various times in periodical medical journals. They have been written, as he explains in his preface, "in the odd moments allowed by the pre-occupations of general practice and the duties of public appointments." They cover a wide range of subjects, but all are of interest, and show evidence of careful thought and observation.

The first is entitled "Ramazzini and His Book." This is the only one of the essays devoted to medical history, and it deals

with the "De Morbis Artificum," which contains a number of acute observations upon diseases of occupation. Certain aspects of insanity are then considered by Dr. Crookshank in a series of notes and short essays. He lays considerable stress upon the physical signs of mental disease, and makes suggestions for the treatment and management of insane patients that should be valuable to general practitioners in regard to the early stages, which come usually under their notice. Among these essays upon the subject of insanity is one in which the frequency, causation, prevention, and treatment of phthisis pulmonalis in asylums are considered, and suggestions are offered as to the separation of tuberculous from non-tuberculous patients and as to the establishment of asylum-sanatoriums.

The next notes and articles are on the subject of the diagnosis and treatment of pulmonary tuberculosis, which Dr. Crookshank prefers to call phthisis; indeed, he somewhat unkindly alludes to those who use the more scientific term as "arrogantly superior persons." His only ground for preferring the older name appears to be that "pulmonary phthisis is not only a tuberculosis, but a septic necrosis as well." We are not conscious of any arrogant assumption of superiority, but there appear to us to be many advantages, not least of which is that of convenience and uniformity, in adopting the etiological designation of the condition.

Scarlet fever and diphtheria are discussed in another series of papers. The isolation hospital is defended as the most satisfactory method of dealing with cases of the former disease and as a means of reducing its incidence. Dr. Crookshank describes a system of bed isolation which he has employed and found of great value in avoiding the troubles incidental to isolation hospitals, troubles which he regards as entirely preventable. Dr. Crookshank's views on these points have been commented on at length already in our columns.

One of the most interesting and valuable of the essays is the concluding one on the examination of bodies found in the river. This contains many useful hints and practical suggestions. There are also a few notes or papers dealing with general subjects, to which specific reference need not be made.

Dr. Crookshank possesses a keen critical faculty and a philosophical turn of mind which accepts nothing on trust. He has a pleasing and easy, though at the same time incisive, literary style. His book is interesting and suggestive, and though his readers may not always agree with his contentions, they will probably realise that they are the outcome of honest and careful thought.

Pediatrics. By JOHN ZAHORSKY, Clinical Professor of Pediatrics, Medical Department, Washington University. With an Introduction by E. W. SAUNDERS, M.D., Emeritus Professor of Diseases of Children, Washington University. London: George Keener and Co. 1911. Pp. 284. Price 10*s.* 6*d.*

THIS little book is written for the practitioner in the form of a series of golden rules which cover the ground of diagnosis, prognosis, hygiene, infant feeding, and treatment. Each sentence is practically an aphorism in itself, and it would be difficult to discover elsewhere in medical literature a more sententious and axiomatic series of apothegms. We in this country are accustomed to aids and breviaries for the immediate purposes of examination and for the ultimate confusion of those who attempt to put their contained knowledge into practice, but this book of aphorisms comes under a totally different category. It would be of little value to the student as an aid to examination, whereas we are of the opinion that it would be of very great value to the practitioner as enabling him to crystallise the knowledge that he has acquired in the days of his studentship and exercised in the practice of his calling.

Not only is the book good reading, but it is so well arranged as to facilitate reference at a moment's notice. All those who purchase a copy can be strongly recommended to commit the more important of these golden rules to memory. There are very few statements made by the author with which we find ourselves in disagreement. We do not, however, consider the diagnosis of disease in infants as easy, nor do we regard enlargement of the thyroid as an uncommon phenomenon in children. Also, the statement that laryngospasm coming in repeated attacks is most commonly symptomatic of tetany is confusing. Both these conditions are manifestations of a hyper-excitable state of the nervous system—commonly called spasmophilia—but neither of them is symptomatic of the other according to the view of present-day authorities.

It is satisfactory to note that the psychological factor is not forgotten, either in treatment or in prognosis, and in the section on the nursing mother the statement that if the mother is to produce good milk her own personal taste must be consulted commands approval. The amounts of food stated to be requisite for normal infants are much too large; an infant 9 months old does not require three pints of fluid in the 24 hours, no matter what be the degree of concentration or dilution of its solid contents. The faults, however, of Dr. Zahorsky's book are few and its virtues manifold; and it is a book that doubtless will be improved and polished with each of the many new editions which may be expected for it.

Die Massenverhältnisse des Herzens unter Pathologischen Zuständen. Von SOFUS WIDEROE. Christiania: Jacob Dybwad. 1911. Pp. 142. (Price not stated.)

THIS investigation on the size of the heart in different pathological conditions was carried out in the hospital at Christiania. The scope of the work, which is based on the examination of a large amount of pathological material, will be best understood by quoting the chief questions dealt with. The author devotes over 30 pages to a consideration of the size of the heart, its relations, and its physiological variations, and deals also with the relative size and weight of the individual parts of the heart. The special or pathological part includes such subjects as hypertrophy and dilatation, and the changes effected by chronic conditions, such as cachexia, adiposity, pulmonary tuberculosis, kyphoscoliosis, chronic renal disease, arterio-sclerosis, valvular disease, and chronic pericarditis. The author also deals very briefly with changes of the heart in acute diseases and the condition of the heart in experimental hydræmia. The table of literature is very full. The whole investigation will prove interesting and useful to pathologists.

Disease in Bone and its Detection by the X Rays. By EDWARD W. H. SHENTON, M.R.C.S. Eng., L.R.C.P. Lond., Senior Surgical Radiographer, Guy's Hospital. With illustrations. London: Macmillan and Co., Limited. 1911. Pp. 72. Price 4*s.* 6*d.*

IT is not sufficient for the purpose of diagnosis merely to obtain good skiagrams of diseased or injured bones; it is necessary that the surgeon should be able to interpret the appearances presented. The light of nature is not sufficient, and even a good knowledge of anatomy needs supplementing by a practical knowledge of X ray pictures. In this work by Mr. Shenton, who has had a very extensive experience in X ray photographs, are given a number of actual skiagrams of injured and diseased bones, and in the text he discusses the appearances seen, and explains their significance. The amount of callus formed around a fracture depends in great part on the maladjustment of the fragments, and Mr. Shenton points out that fractures treated by Mr. Arbuthnot Lane by "plating" show hardly any callus. A good skiagram of a normal hip shows clearly the "diagnostic line" first

described by Mr. Shenton; it is of much importance in recognising injury or disease of the hip-joint. This book is useful, and though it contains 46 skiagrams we cannot help wishing for more.

Lehrbuch der Pathogenen Mikroorganismen. Die Pathogenen Bakterien. Für Studierende und Aerzte. Von Dr. PAUL V. BAUMGARTEN, Professor der Allgemeinen Pathologie und der Pathologischen Anatomie an der Universität Tübingen. Mit 85 zum teil farbigen abbildungen und 1 steindrucktafel. Leipzig: S. Hirzel. 1911. Pp. 955. Price, paper, 24 marks; half bound, 26 50 marks.

THE students and physicians for whom, as set forth in the title, this book has been written owe a deep debt of gratitude to Professor Baumgarten. His classical "Lehrbuch der Pathologischen Mykologie" appeared more than 20 years ago, and the present work, which in some sense may be regarded as a new edition of the older book, has been undertaken because the author holds that such a point of clearness and unanimity with regard to the problems of immunity and infection has now been reached that their presentation in text-book form is more than justified. The material available has been compressed as much as possible, but notwithstanding this the present volume is limited to a consideration of the pathogenic bacteria. A second volume dealing with the pathogenic moulds and protozoa is, however, promised, and to its appearance all students will look forward with eagerness.

The task of the reviewer of such a work lies chiefly in a presentation of the plan adopted by the author in dealing with his material. The literature of the subject occupies, as was to be expected from Professor Baumgarten, an important place. Each chapter is followed by a carefully selected bibliography. The general arrangement of the book does not differ strikingly from that of the usual text-book. The first third is occupied by a consideration of general problems and general methods of research, while the remainder deals with individual micro-organisms. There are throughout, however, a crispness of statement and a critical weighing, in the light of very full knowledge, of the evidence bearing on the problems dealt with, which are of the utmost value to those for whom the work is intended, and even the specialist will be grateful for the opinion of such an authority as Professor Baumgarten. The problems of immunity are treated as part of a general consideration of the action of agents inimical to micro-organisms, and the chapter which begins with the effects of chemical and physical agents and deals with disinfection ends rather unexpectedly in the subject of immunity and immunisation. In dealing with disinfection we may warn the reader that the author uses the terms disinfectant and antiseptic in a sense differing from that used in English works; "kolyseptics" are the equivalents of our antiseptics.

In his treatment of immunity it is hardly necessary to say that it is the theory of Ehrlich rather than that of Metchnikoff which finds favour with the author, and indeed he allots to the phagocyte a very minor part. It is suggested, in fact, that even the strictly antitoxic sera possess a bacteriolytic activity, though one easily destroyed and difficult to demonstrate. Agglutinins are considered to possess a constitution more closely allied to that of a cytolysin than of an antitoxin, and they may possibly be identical with precipitins. Valuable chapters on immunising methods and on the demonstration and valuation of immune substances follow; cholera and diphtheria are used as examples of the method. Serum diagnosis occupies an important place. Practical directions for carrying out the investigations are given, with examples drawn from the most usual and suitable cases. The subject of opsonins meets with full recognition.

The special part of the book has some individual features. The organisms are grouped according to their pathological relationships without regard to their morphology. The primary division is into blood and tissue parasites, and these are further differentiated into obligate and facultative. The obligate tissue parasites are subdivided into toxic and infective organisms, and these latter into groups characterised by their exudative or proliferative activity. The first place is therefore occupied by the spirilla found in diseases of the relapsing and African tick fever type, and these are followed by the group of hæmorrhagic septicæmias. It is suggested that possibly the M. melitensis has the same lack of connexion with Mediterranean fever that the B. suipestifer and B. suisepticus have with the diseases in which they are found, but the evidence, especially that drawn from immunity, is of a much less cogent character. There are excellent and long sections on cholera and tubercle; the latter occupies a hundred pages, and various aspects of the subject are dealt with. The facultative blood parasites, with which the book closes, are the pneumococcus, the B. anthracis, and the spirochæta pallida.

This is a book of reference for all who want an authoritative opinion on bacteriological problems. There are many illustrations, none of them photographic, and many of them are well known and have become classical.

LIBRARY TABLE.

Dispensing Made Easy. By W. G. SUTHERLAND, M.B. Aberd. Fourth edition, revised by F. J. WARWICK, B.A., M.B. Cantab., M.R.C.S. Eng., L.S.A. Bristol: John Wright and Sons, Limited. Pp. 102. Price 3*s.* 6*d.* net.—This little volume has involved a good deal of work to make it trustworthy, and the busy practitioner will recognise its value as an aid in quick and accurate dispensing. A reference to it saves time, and the formulæ are of the approved modern type. We have noted one misprint on p. 95, where alcohol is spelt alcodol. We note also that under "Points Worth Remembering" a suggestion made by us in a previous notice has been adopted.

Urine Examination Made Easy. By THOMAS CARRUTHERS, M.A., M B., Ch.B. Glasg. Second edition. London: J. and A. Churchill. 1911. Pp. 47. Price 1*s.* 6*d.* net.—This book is primarily intended for nurses, the methods described being of the most elementary description and the ultimate diagnosis being left to the physician. The nurse, by following the clear directions given, can render a useful preliminary account of the case. The chemical testing of urine offers obvious pitfalls to the uninitiated, and the author is right in insisting upon careful observation and accurate description. On the whole, he does not expect or ask too much, and when a result of doubtful or serious significance appears the direction is, "Refer to doctor."

Forty-Seventh Annual Report of the Boston City Hospital, including the Report of the Superintendent, Feb. 1st, 1910, to Jan. 31st, 1911, inclusive. Published by the City of Boston Printing Department. 1911.—In this report attention is called to the approaching completion of a pathological histology, written from a biological point of view and based on an analysis of the material collected in the hospital during the past 14 years. Reference is made to four papers, two of which were read in May, 1910, before the American Association of Pathologists and Bacteriologists, of which publication is promised in the *Journal of Medical Research*, and two which were published last year in the *Journal of the American Medical Association*. A fifth paper, read in November, 1910, before the Johns Hopkins Hospital Medical Society, gives an analysis of many cases of cirrhosis of the liver, and opens up several important points. It shows that, apart from cancer, five different types of lesions, due to as

many varieties of causes, may lead to cirrhosis. While alcohol is the most common cause, bacterial infection among the bile-ducts, especially in children, may bring about a typical form of cirrhosis, which in later stages causes ascites and death. It has also been found that the alcoholic type of cirrhosis is characterised by a peculiar form of hyaline degeneration of the liver cells preceding necrosis. Among other points suggested in this group of five papers is the fact that the disappearance of the liver cells in the centres of the lobules around the hepatic veins is due, not to pressure, as is ordinarily taught, but to a central necrosis of toxic origin. Under ordinary conditions these necrotic cells are fully restored by regeneration, but such regeneration is prevented when chronic passive congestion is present. Also the peculiar type of cancer known as rodent ulcer has been found to arise from a hair matrix, and to be characterised by the production of epithelial fibrils, which in the hair fuse together, become hyaline, and form the hair shaft. It is further stated that the so-called giant-cell sarcomata are not tumour cells at all, but foreign body giant cells, due to the fusion of endothelial leucocytes attracted into tumours, and other lesions involving bone, by dead bone, which needs to be dissected and removed. They are identical with the osteoclasts of normal bone, which arise in the same way. The importance of this fact is pointed to in the case of epulis, which is often not a true tumour, but only a tumour-like mass of inflammatory tissue containing giant cells around disintegrating particles of bone or lime salts. In such a case, it is stated, thorough curetting would seem to be all that is required.

Plague at Home and Abroad. The Annual Public Lecture on the "Laws of Health" delivered at the Midland Institute, Birmingham, Oct. 6th, 1911, by DAVID FRASER HARRIS, M.D. Glasg., D.Sc. Lond., F.R.S.E., Professor of Physiology in the University of Halifax, N.S.; formerly Lecturer on Physiology in the University and on Hygiene at the Midland Institute, Birmingham. Birmingham: Cornish Brothers, Limited. 1911. Pp. 17. Price 3*d.* net.—This interesting lecture has a value of a wider scope, doubtless, than was originally contemplated. By its detailed account of the way in which the various steps in the knowledge of plague have been acquired, it should serve the two-fold purpose, firstly, of enlightening the public generally on those apparently mysterious methods of science, concerning which they are usually so hopelessly ignorant—an ignorance that is the cause of most of the obstruction to the application of the scientific measures of preventive medicine; and, secondly, of increasing the public respect for the profession of medicine. It is through the study of the methods of scientific medical research as exemplified in the growth of knowledge about such diseases as plague, malaria, yellow fever, sleeping sickness, and others, that the confidence of the public in the medical profession will be maintained. This little pamphlet, therefore, can be cordially recommended by any of our readers to their patients and friends for general perusal.

Off the Main Track. By STANLEY PORTAL HYATT. London: T. Werner Laurie. 1911. Pp. 293. Price 12*s.* 6*d.* net.—A series of vivid pen pictures of men, manners, and things, principally in connexion with South Africa, are here presented by a writer who shows much sympathy with the native races and is rather impatient with British rule. Some 30 illustrations add to the value of the book. In view of the "fly crusade," the writer's theory that flies may be responsible for the spread of venereal disease is interesting. "Whenever," he says, "a Mashona has an open sore, due to any cause whatsoever, he lies in the sun and allows the flies to get at it ..... whilst the flies are afterwards permitted to settle where they like—on food, in the corners of babies' mouths, anywhere." Whether or not syphilis is conveyed in this way, the danger arising from such a condition of things is sufficiently obvious.

JOURNALS AND MAGAZINES.

Edinburgh Medical Journal.—The October issue of this journal is the annual "Educational Number," containing some 30 pages on the facilities for medical training in Scotland. Dr. D. Berry Hart writes on Enzygotic Twins—that is to say, twins derived from one zygote or fertilised ovum, the condition being due to doubling of some of the "determinants." Dr. J. H. Harvey Pirie and Mr. A. A. Scot Skirving deal with Intranasal Carcinomata, and Dr. D. W. Currie and Dr. Edwin Bramwell describe a local epidemic of Acute Poliomyelitis. Mr. J. W. Struthers records an unusual form of Diverticulum Ilei which had formed an inflammatory mass with only a minute canal persistent in the centre; and Mr. George Robertson discusses two cases of Acute Dilatation of the Stomach following Gastro-Enterostomy, and caused by undue narrowing of the jejunum in the operation.

Dublin Journal of Medical Science.—This (October) number also is "Educational." The original matter consists of the Review of Vital Statistics for Ireland, delivered by Sir W. J. Thompson as his presidential address at the Royal Institute of Public Health Congress, Dublin, and published in abstract in THE LANCET of Sept. 16th.

Birmingham Medical Review.—In the current number of this magazine Dr. W. J. McCardie continues his review of the Present Position of Spinal Analgesia. He concludes that it occupies a middle position between inhalation and local anæsthesia. "Generally speaking ..... it should only be used in certain selected cases." Dr. A. Douglas Heath records an epidemic of Groin Ringworm in a school, and Dr. William H. Wynn contributes an interesting critical review of the curious phenomena known as Anaphylaxis and Serum Disease, of which the true nature is little understood at present, but which are gradually being brought into relationship with a number of diseases and morbid symptoms.

West London Medical Journal.—The October issue opens with a forecast by Mr. McAdam Eccles of the future of surgery, in which he puts in a plea for the supply of more plentiful material for dissection and for the practice of operative surgery classes. Mr. Leonard A. Bidwell writes enthusiastically on the immediate and ultimate results of gastro-enterostomy for gastric and duodenal ulcers, holding that all cases of the latter condition should be operated on at once, and of the former as soon as medical treatment shows any sign of lack of success. In the discussion which followed his paper some doubts were expressed as to the general need of such drastic procedure.

Caledonian Medical Journal.—The opening article in the October number of this journal is the presidential address delivered by Dr. J. L. Waters at the annual meeting of the Caledonian Medical Society held in Hull on Sept. 23rd. He took for his subject Certain Features of Celtic Life and Story, illustrated with ample details relating to anthropology, history, and questions of politico-social organisation. Dr. Lachlan Grant of Ballachulish, Argyleshire, gives much salutary advice in a contribution entitled "Home, Sweet Home," which in its original form was a health lecture delivered to women and girls in Oban.

Annals of Tropical Medicine and Parasitology.—Issued by the Liverpool School of Tropical Medicine. Series T. M. Vol. V. No. 2. August, 1911.—The editor of these Annals is Professor Sir Ronald Ross, K.C.B., F.R.S., and the first item in the present number is an "In Memoriam" notice, with portrait, of the late Sir Rubert Boyce, F.R.S., himself a

former editor of the publication. After this, Professor Umberto Gabbi furnishes a short but interesting "Note on Tropical Diseases in Southern Italy," in which he refers more particularly to Mediterranean fever and kala-azar. Professor R. Newstead then contributes an article on "Papataci Flies (Phlebotomus) in the Maltese Islands"; this has been reprinted from the *Bulletin of Entomological Research* and is profusely illustrated. The article is in reality the report of the twenty-third expedition sent out by the Liverpool School of Tropical Medicine. Professor Newstead, in collaboration with Mr. Henry F. Carter, assistant entomologist, also writes a second paper on "Some New Species of African Mosquitoes (Culicidæ)," with illustrations. Captain R. McCarrison, I.M.S., a high authority on the subject of the etiology of bronchocele, gives a valuable paper on the "Experimental Transmission of Goitre from Man to Animals," with illustrations. Two eminently scientific papers are contributed by Dr. W. W. Yorke and Dr. R. W. Naus of the Runcorn Research Laboratories, the first being on "The Reducing Action of Trypanosomes on Hæmoglobin," and the second on "The Mechanism of the Production of the Suppression of Urine in Blackwater Fever" (illustrated). This last-mentioned paper, we believe, was read in the Tropical Medicine Section at the annual meeting of the British Medical Association in July last at Birmingham. Dr. J. W. W. Stephens gives an account of "The Anti-Malarial Operations at Ismailia" (with 2 maps). The next article is the first report of the expedition sent out in 1911 to Gambia by the Liverpool School of Tropical Medicine; it is furnished by Dr. J. L. Todd and Dr. S. B. Wolbach, and is entitled "The Diagnosis and Distribution of Human Trypanosomes in the Colony and Protectorate of Gambia." The last of these interesting contributions is one upon which we have already made some comments in the columns of THE LANCET of Oct. 14th; it is by Dr. G. C. E. Simpson and Mr. E. S. Edie, B.Sc., and its title is, "The Relation of the Organic Phosphorus Content of Various Diets to Diseases of Nutrition, particularly Beriberi." This number of the Annals contains a large amount of important, as well as varied and valuable, matter; the papers are well worth careful study by all who are concerned with tropical medicine.

British Journal of Inebriety.—The October number of this publication contains an article on Alcoholic Epilepsy, by Dr. Francis Hare, based on his clinical experiences as medical superintendent of the Norwood Sanatorium. Dr. Hare believes that alcohol *per se* may give rise to typical epileptic fits in individuals who have, so far as can be discovered, no tendency to epilepsy, and in his paper he summarises 13 observations in support of this view. All the patients were addicted to continuous excess, drinking chiefly spirits; there were no takers of absinthe. In every instance the epileptic attack, which was ordinarily of the type of *grand-mal*, followed a complete withdrawal or sudden reduction of the drinker's usual allowance of alcohol, the duration of the period from the stoppage of the intoxicant to the onset of the fit varying from 15 to 74 hours. In three of the cases delirium tremens developed after the epileptic seizure. From the facts observed by him, Dr. Hare draws the conclusion that alcoholic epilepsy depends primarily upon the establishment of tolerance to alcohol, and secondarily upon a sudden fall in the amount of the drug circulating in the body—in short, that it is of the nature of an abstinence symptom in chronic intoxication. He holds a similar view with regard to the causation of delirium tremens. It is Dr. Hare's experience that a patient who has once suffered from alcoholic epilepsy is likely to have convulsions on subsequent sudden cutting off of his usual supply of liquor, but he has not found that the occurrence of these fits has any tendency to set up ordinary recurrent epilepsy. This number of the journal also contains a brief *résumé* of the facts regarding the relationship of alcoholism and tuberculosis, by Dr. J. Johnston, and an account by Mrs. Bramwell Booth of the work of the Salvation Army in the care of inebriate women.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

A COMITIA was held on Oct. 26th, Sir THOMAS BARLOW, Bart., K.C.V.O., the President, being in the chair.

The following gentlemen having passed the required examination were admitted Members of the College:—Francis Graham Crookshank, M.D. Lond., L.R.C.P., George Harold Cross, M.B. Oxon., Elkin Percy Cumberbatch, M.B. Oxon., Robert Skeoch Frew, M.D. Edin., Horace Bryden Hill, M.B. Lond., L.R.C.P., Edwin Walter Routley, M.D. Brussels, L.R.C.P., Percy Edward Walton Smith, M.B. Sydney, and John Aldren Wright, M.D. Camb.

Licences to practise physic were granted to 83 gentlemen who had passed the requisite examinations.

The PRESIDENT announced that Mr. Arthur Lloyd Davies had been appointed the nineteenth Jenks scholar. He also stated that as Sir David Bruce was unable to undertake to deliver the Croonian lectures in 1913 Dr. J. Dixon Mann had been appointed in his place.

The following communications were received: 1. From the Royal College of Surgeons of England, dated July 27th and Oct. 13th, reporting proceedings of the Council of that College upon July 27th and Oct. 12th last. 2. From the Dean of the Faculty of Medicine, Edinburgh University, dated July 27th, reporting that the Murchison Memorial Scholarship had been awarded to Mr. Walter Quarry Wood. 3. From the librarian of the University of St. Andrews, dated Sept. 28th, thanking the College for a gift of books.

A report from the Committee of Management dated Oct. 3rd was received and adopted. The report recommended that the County School, Carnarvon, and Repton School should be added to the list of institutions recognised by the Examining Board in England for instruction in chemistry and physics.

The PRESIDENT reported on the celebration of the 500th anniversary of the foundation of the University of St. Andrews, and the REGISTRAR (Dr. J. A. Ormerod) read the admirable Latin address from the College which he had prepared for presentation on that occasion.

A report was received from Dr. StClair Thomson concerning the Third International Congress of Laryngology and Rhinology. The audited accounts of the College for the year ending Sept. 19th, 1911, were received and adopted.

Dr. J. A. Ormerod was re-elected a member of the Committee of Management.

The Harveian Librarian (Dr. Norman Moore) supplied a list of books and other publications presented to the library during the past quarter, and the thanks of the College were returned to the donors.

After some further formal business the PRESIDENT dissolved the Comitia.

UNIVERSITY OF OXFORD.—The following degrees have been conferred:—D.M., E. L. Kennaway; B.M. and B.Ch., J. F. Penson and E. L. Pearce-Gould.

INVALID LADIES' HOME AT CANNES.—This home is open to ladies, being British subjects, also to American ladies, between the ages of 18 and 50, who are suffering from maladies for which the climate of Cannes is recommended, whose means do not permit them to winter at Cannes without this assistance, and of whose recovery there is reasonable hope. The home is open from Nov. 1st to April 30th of the following year. Application should be made to Miss M. Husband, Hôtel des Anglais, Cannes, Alpes Maritimes, who will send the necessary form to be filled up. The charge for board, lodging, and medical attendance is 24 francs 50 centimes per week, to be paid weekly in advance. Dr. W. Gordon Sanders and Dr. Ginner are the honorary physicians to the home. Fifteen ladies can be accommodated.

THE LANCET.

LONDON: SATURDAY, NOVEMBER 4, 1911.

Report of the Chief Medical Officer of the Board of Education.

THE annual report for 1910 of the Chief Medical Officer of the Board of Education was presented to Parliament on Saturday last. It is a document of great interest, both from the facts which it sets out, the comments upon, and deductions from, those facts made by Sir GEORGE NEWMAN, and the evident promise underlying the whole that by an adequate system of inspection of school children slowly but steadily we must improve the race. It is not so unnecessary or platitudinous as might be supposed to make the last statement, for a good many persons, some of whom ought to know better, have been found during the last two years saying that the system of school inspection implies merely the collection of a vast number of statistics, which are gathered in such a way that they can teach but little, even though their lessons be sought out, and which are destined not even to receive the necessary collating and sifting without which their utility and significance must be gone. This report contradicts such gloomy prophets succinctly. Closely written, bristling with facts, and compelled to range over large and undefined territories of medicine, sanitation, hygiene, and eugenics, the report is none the less so clearly put together that the intelligent reader, medical man or layman, can hardly fail to draw his conclusions, or to see that so far as these conclusions are definite they are based upon the results of school inspection. The net outcome of the report is to show that the vast revolution which began to take place in the care of the youth of this country when the Education (Administrative Provisions) Act, 1907, came into force has progressed on the whole in a systematic and satisfactory manner. The facts collected with regard to the administration of medical inspection and medical treatment of school children, as to their physical condition, as to the education of feeble-minded and physically defective children, as to the proceedings of school doctors, parents, teachers, school nurses, and attendance officers in their various interrelations—all the figures and the details therewith connected speak for the work accomplished; and from reading the summarised account we arrive at the view that the ameliorative phase following upon medical inspection in England and Wales has definitely begun. We say this despite the figures given by Sir GEORGE NEWMAN, who points out, speaking generally, that "out of the 6,000,000 children registered on the books of the public elementary schools of England and Wales about 10 per cent. suffer from a serious defect in vision, from 3 to 5 per cent. suffer from defective hearing, from 1 to 3 per cent. have suppurating ears, from 6 to 8 per cent. have adenoids or enlarged tonsils of sufficient degree to obstruct the nose or throat, and thus to require surgical treatment, about 40 per cent. suffer from extensive and injurious decay of the teeth, about 30 to 40 per cent. have unclean heads or bodies, about 1 per cent. suffer from ringworm, 1 per cent. from tuberculosis in readily recognisable form, from 1 to 2 per cent. are afflicted with heart disease, and a considerable percentage of children are suffering from a greater or less degree of malnutrition." This formidable category of disease and defect, with all the suffering and inefficiency therein implied, must greatly limit the capacity of the child to profit by education, while the outlook for the next generation is certainly darkened by the presence among us of so much incapacity. None the less the evils are to a great extent remediable, and now that we have taken stock of them in a systematic way and begun to combat them in many directions the prospect does not appear so very alarming. Parliament is even now engaged in an attempt to grapple with disease in the adult, and it is, as this report points out, an opportune time to remember that no insurance scheme can be effective or enduring unless it begins with the children, and particularly is this the case in relation to the prevention of tuberculosis with which we hope to deal on another occasion. No greater step could be taken by Parliament at the present time towards these desired ends than to secure that ample assistance is rendered in aid of all agencies, voluntary or State, which work for the amelioration of the children.

The machinery of medical inspection during the year has throughout the country become more homogeneous and more effective. The Act, it will be remembered, originally laid down that not only was it the duty of each local educational authority to provide for the medical inspection of children about the time of their admission to a public elementary school, but that the same inspection would have to be made on such other occasions as the Board of Education might direct. And the Board determined almost immediately that the children should also be inspected at the opposite end of their school lives; so the school population was divided into two classes for inspection—what are termed "entrants" and "leavers." In this way the local education authorities would know with what amount of mischief they had to deal, whether the methods adopted had borne fruit, and thirdly, how far the boys and girls starting in life promised well or were handicapped by physical or mental default. In addition to these two inspections 100 local education authorities undertook during 1910 an intermediate investigation, while it should be remembered that when a medical officer was making a routine inspection either of "entrants," "intermediates," or "leavers," he would be asked, as a matter of course, to examine any child who appeared to be suffering from some reason or another. The machinery of inspection has in fact begun to justify itself, and in particular Sir GEORGE NEWMAN is able to give a better report of the position of London than was the case last year. In the report for 1909 we were compelled to point out in these columns, in accordance with Sir GEORGE NEWMAN'S representations, that London lagged behind the rest of the country. The complicated difficulties under which the London County Council found

itself from the first with regard to the medical inspection of school children are well known to most of our readers, and much allowance was throughout made for the fact that the Council school children were placed at certain disadvantages, many, of course, arising out of the mere size of Greater London. There has throughout been a sincere wish on the part of the Council to meet the situation squarely, but the action taken has not been fortunate. This should now all be changed. From Sir GEORGE NEWMAN'S report for 1909 it appeared that the London Education Authority had practically failed to inspect the school children of the metropolis in accordance with the code, for out of 148,000 children comprised in the estimates of "entrants" and "leavers" only about one-quarter had been officially reported as inspected, while there had been no statutory medical inspection during that year in the vast majority of the elementary schools. During the year 1910, however, vigorous efforts were made by the authority to comply with the Act and to cope with the mass of arrears, the result being that the London County Council should in the future be able to fulfil its legal duties. It would seem from Sir GEORGE NEWMAN'S report that more than half the schools still awaited medical inspection at the close of the year, but it must be remembered that throughout the whole period the reorganisation of the medical work of the London Education Authority was going on.[1] Readers of THE LANCET know well the direction which that reorganisation has taken, and how thoroughly it is in accord with our often-expressed views. From the beginning of the movement which led up to the passing of the Act we were of opinion that inasmuch as school hygiene could never be divorced from home hygiene, the more sympathy and even combination that could be secured between the educational authority and the sanitary authority in the matter of medical inspection the better it would be for the children concerned. The view did not find universal favour, and some well-qualified speakers upon education, as all know, considered it to be a narrow one, but we believe that events have since justified the attitude which we took up, and we are glad to see that the London County Council is now of the same opinion. The Council has decided that the arrangement under which the medical charge of the school children was carried out partly by the Public Health Department, but independently by the education officer, is to be terminated immediately, inspection and treatment being coördinated and administered under the direction of the medical officer of health for the County of London. Upon the retirement, imminent and deeply regretted, of Sir SHIRLEY MURPHY from his present position as chief medical officer of the county, a new medical officer of health will supervise the whole work of medical administration in relation to education, combining in one department educational and sanitary questions. This is as it should be, and when time has allowed the reorganisation to take effect we are confident that the results will display the wisdom of the Council.

Upon the physical condition of the school children of the country, as revealed by medical inspection, Sir GEORGE NEWMAN makes remarks that will be endorsed by every thinking person when he warns us that while careful medical inspection of each individual child is the only sure foundation upon which preventive or remedial work of lasting character can be established, the process must be slow. Neither the local education authorities, nor a Government department willing to assist them in every possible way, can transform a mass of six million children, having the categorised defects to which we have already alluded, in any brief space of time into physically and mentally perfect citizens from whom the best of work and the best of descendants can be expected. The population of the country at large must work towards the desirable end. An organised system of medical inspection is the first thing; the remedies for the ills revealed come second, and for these not only is there required a proper interplay of effort between the school doctor, the school nurse, the attendance inspector, the parent, and the child, but a public intelligence of what is going on is also demanded—an intelligence that will realise how far we are from coping with disease amongst school children when we have named pathological conditions to which they are in certain proportions subject, and adopted methods more or less successfully to remedy those conditions. It is sad that so many of our State-educated children should have defects of sight or hearing. It is a serious drawback to the health of the race that so large a proportion of our boys and girls should have carious teeth. It is important, though less gravely so, that there should be a permanent prevalence of skin diseases, of adenoids, and of ringworm. These latter can be effectively treated, and the machinery for treatment is already shaping itself well; and for the other conditions an improved environment will work wonders. Over and above these definite diseases, with their definite remedies, there is the vast question of how far malnutrition, which renders so much of the school work done by the children of little account, can be dealt with. Here is where public sympathy and active coöperation is needed, and to our mind the great point about Sir GEORGE NEWMAN'S report is its cogent simplicity. Any careful reader can learn from it the vast work that has been inaugurated by the Board of Education, the progress that has been made, and in particular the numberless directions in which private individuals, by helping the medical profession to detect, to prevent, to arrest, and to remedy disease among school-children, can surely improve our race.

[1] See THE LANCET, Oct. 28th, 1911, p. 1222.

The Retiring Age.

THE problems that present themselves in considering the important matter of retirement from business vary accordingly to the sphere from which retirement takes place; but so many of them have a physiological or sociological side that it is not only to the question as affecting the medical profession that a medical paper need confine attention. From the medical profession, we suppose, not a great number of its members ever retire, in the sense that they voluntarily abandon their occupation while still in full use of their faculties. In our profession many more men die in harness than lay harness aside while still strong enough to carry it well; and the

comparatively low average age of death in the medical profession appears to show that at any given moment there is a considerably less proportion of retired members than is the case with many other callings. The work of a medical practitioner is more exacting and more exhausting than is that of a lawyer or of a clergyman, while he has not the same facilities that these latter possess of being in their profession only to the extent that they choose. An aged clergyman does not lose his benefice by delegating more and more work to a curate (if he can get one and pay one); rather his act is seen to be in the public interest. A lawyer can do his best duty while himself in unsound health; the physical grind can be left to his juniors. But with the medical man his duties are too personal for delegation and often too hard to be executed by a frail physique. Moreover, compared with his income, the medical man's expenses are proportionally high; consequently he is liable to be obliged to continue to earn an income into the late years of his life. It is in the case of general practice that the difficulty about retirement occurs, already alluded to—namely, the intimate professional relationships, which make retirement an act of desertion. This is a difficulty which, though real, has much decreased in these more hurried days. Time was when around the successful practitioner there gathered in his advancing years a body of friends, also patients, men and women who in many instances entered the world with his aid and explored the vicissitudes of childhood, youth, and maturity under his guidance. From many of these patients the family friend, being also the medical man, had received confidences which they might now be loth to impart to fresh ears. Yet without these confidences they would hesitate to entrust themselves to new hands. To withdraw his professional activity from such a circle is, in the case of a general practitioner, to inflict a very real loss upon his *clientèle*, so that even when pecuniary circumstances do not forbid it affectionate feelings may retard a medical man's retirement, though too much stress must not now be laid on such arguments. Social conditions are now much more fluid, and the number of persons who remain from the cradle till middle life always in the same locality must seldom be large enough to constitute an actual argument against the retirement of a medical practitioner.

Among those who practise along specialised lines of medicine the position more resembles that of men of other businesses and of other professions. The question of the retiring age is an important matter to them, though not perhaps of the same importance to the community. But, indeed, it might well be asked by those adopting a high moral and social standard—Ought a man to retire at all? Ought he to give up work so long as he is perfectly fit for its performance? The question cannot be answered off-hand. No man has a right to deny benefits to his fellows, but a man is not always the best judge of how far the benefits that he can supply cannot be supplied equally well by others. Those who know themselves in any real sense may be trusted not to retire with undue haste or to postpone retirement to an unnecessary date. But it is the greatest possible mistake to suppose that the man who retires, whether from the feeling that his course is run or from the desire to benefit by leisure at the close of his life, has necessarily chosen the best path for himself. The accessory circumstances vary so immensely that where the course is right for one man it is certainly wrong for another. We may remember the remark of the American business man, successful and aged, to his son, who suggested that the business could now run on without the senior partner: "Yes, my lad; but the senior partner can't run on without the business." There was much truth in the old man's retort. The tremendous hold of habit has to be reckoned with. Not all men can safely and suddenly change their methods of life when they are approaching old age, and if work is an ingrained habit the enforced idleness of leisure is apt to become disastrous. Herein lies the importance of a second string to the professional bow. A well-cultivated hobby, that has grown in the garden of activity alongside the professional tree, may well shelter the retired professional man's last years, and give him just as much labour as is good for him to accomplish. Who has not seen the lack of such a resource in those perforce retired from active service? The pensioned military man, who has cultivated nothing but his profession, and knows no art but that of command, may make the family martinet, or the club bore, or both.

This question of the retirement of an active worker is not simple whether looked at from an objective or subjective standpoint. Subjectively the individual may act as best suits him and his belongings. If he "can't run without his business" he will see no reason against continuing to run with it. But suppose that business to be an already overcrowded profession. Objectively, and reasonably as it appears to them, his competitors cry, "You have enough to retire on, your family and your wants are supplied to the end. Why do you continue to fill a place that so many are waiting for by whom its advantages are really needed?" The answer must be found in a broad view. It is the greatest good that is to be sought, and that must often mean that a man should continue his distinguished work though he does not need the money it brings, and though there are others anxious to do the work instead of him. Though we may still be far from the day when the practice of medicine will become a State service, it is impossible not to see that the tendency of the times is towards such a revolution. In a State medical service compulsory retirement at an age-limit, as we have it in the navy and army, would possibly be enforced upon our profession. Our feeling is that such regulations would be highly dangerous. Youth must be served, and the wisest seniors among us are those who welcome most readily the coöperation of their juniors. But numbers of the difficulties which the public brings to medicine for solution depend for that solution upon the wisdom that is born of manifold and divers experiences, so that in many cases compulsory retirement of medical men under a system of age-limit would be a misfortune. While there is bound to be injustice and waste of good material wherever a hard-and-fast age limit is laid down for the cessation of active work by all individuals of any large body of men, in dealing with the medical profession this would be particularly the case.

Suicide in Prisons.

IN his annual report for the year ended March 31st, 1911, Dr. HERBERT SMALLEY, the Medical Inspector of Prisons, discusses at some length the question of suicide in the prison population of this country. The question is one of very great interest, not only in its possible bearing on the efficiency and humanity of prison administration and with reference to the psychology of the criminal, but also because, presenting as it does a particular case of a large and important bio-social problem, the examination of its special and distinctive features may be expected to throw light on other aspects of that problem. For this reason the facts and figures brought forward by Dr. SMALLEY have a wider significance than might be suggested by their official presentation, and are likely to appeal to the interest not only of the legal and medical professions, but to many persons who are not specially concerned with penological matters, but who have the cause of social progress at heart.

The most striking and also the most satisfactory point established in Dr. SMALLEY'S report is that in the English prisons suicide is of very infrequent occurrence. During the last ten years the number of deaths from this cause has varied from a minimum of 4 to a maximum of 14, the annual average for the whole period being 9·5, a tolerably low figure when it is borne in mind that the yearly admissions to prison average upwards of 200,000. This low rate of suicide would go to show that imprisonment *per se* has not the detrimental influence in this respect which used to be, and in some quarters is still, imputed to it. And the same conclusion is further confirmed by the extreme rarity of this phenomenon in the class of prisoners who ought more than any other to show the alleged injurious effects of incarceration—namely, the inmates of the convict prisons. It may, indeed, be argued with some plausibility that so far from promoting suicide the fact of imprisonment, which postulates the removal of the worries and disappointments incident to the struggle for existence, has quite the opposite result; and we should, perhaps, be justified in attributing to the beneficent influence of imprisonment the fact that during the last few decades suicide in prison has shown no trace of the upward tendency which until quite recently has been so marked a feature in the statistics of ordinary suicide. Whatever be the explanation, this want of correspondence in the statistical movement of suicide in the general population and in the prison population may be taken to suggest that suicide amongst prisoners does in fact present some distinct characteristics. And this impression is strengthened by a more detailed examination of the data, which shows, as Dr. SMALLEY points out, that prison suicide is marked by certain peculiarities, amongst which the most notable is a tendency to much earlier age-incidence. In ordinary suicide, as is well known, the period of maximum frequency is in the later age-groups; in fact, this predominance is so marked that on the average over 55 per cent. of male suicides occur at ages over 45, though the males above that age form only 28·3 per cent. of the total adult male population. On the other hand, amongst prisoners who commit suicide the proportion aged upwards of 45 years is only 24·4 per cent. It is true that the prison population, as compared with the general population, contains a relative excess of young adults, but the difference, even at the highest probable estimate, would certainly be quite insufficient to account for such a contrast as we have indicated. It appears likely, therefore, that the explanation is to be sought, at all events in part, in other influences dependent either on the special character of persons going to prison or the special conditions that attach to imprisonment. In this connexion Dr. SMALLEY draws attention to the highly significant fact that suicide is relatively far more frequent in the case of prisoners guilty of impulsive crimes, and more particularly of homicidal offences and of crimes against sexual morality. These are forms of delinquency which are relatively infrequent and make but a very small contribution to the prison population; indictable homicidal crime, for instance, only amounts to 2·3 per cent., and indictable sexual offences to 1·7 per cent. of the total volume of indictable crime, but they account respectively for 14·7 per cent. and 7·3 per cent. of the criminality of prisoners committing suicide. It might be suggested that, as these offences expose the delinquent to heavy penalties, the suicidal tendency may be related less to the nature of the crime than to the known or anticipated severity of the punishment which the prisoner has to face; but against this explanation we have the fact that this tendency is equally marked in the minor sexual offence of indecent exposure, which is of like impulsive character with the more serious crimes of lust, but does not usually entail more than a very short sentence of imprisonment. We may take it, then, as established that the criminals who have committed impulsive offences, and especially offences expressing morbid and destructive impulses, are those who are most prone to suicide; and as it is offenders of this same class who are also most frequently found to be, or to become, insane, it is reasonable to suspect that the suicidal tendency may be due to insanity, the impulsive act of suicide, like the impulsive crime which preceded it, being an initial symptom of mental disease. While admitting that this explanation may hold good in many instances, Dr. SMALLEY seems disposed to think that more often than not the emotional instability shown in the crime and in the suicide may be due to conditions within the limits of mental health. In this connexion the facts regarding suicidal attempts ought to be peculiarly instructive, and they certainly go to support Dr. SMALLEY'S view. Indeed, most observers who have had large experience of cases of this sort will probably agree that only a relatively small proportion of persons making such attempts are insane; the majority are suffering from alcoholism, while the residue consists chiefly of adolescents in whom such a condition of emotional instability as we have indicated is to be regarded as a physiological result of their age. And this latter fact may, perhaps, be allowed to have special significance in connexion with the tendency to earlier age incidence in prison suicide; it would go to suggest that an important factor in the causation of such suicides may be that the impressionable temper of youth allows an excess of impulsive reaction to the shock of detection or of punishment. If these inferences are justified we should be led to conclude that, in relation to suicide, imprisonment exercises a different influence, according as the individual

who has to undergo it is in adolescence or early manhood, or has reached maturity; in the former case it acts as a violent emotional shock of which the self-destructive impulse is a natural sequence, while to the grown man it is rather a temporary protection from the stresses of active life, and is, therefore, to that extent a corrective of the economic influences which play so important a part in determining adult suicide.

Whatever view be taken as to these speculative considerations, the facts embodied in Dr. SMALLEY'S report afford at all events additional and very important evidence of the desirability of taking into account their physiological condition in applying penal discipline to adolescent offenders. It may be noted as a significant fact from this point of view that no instance of suicide has been recorded amongst the youths detained in the Borstal institutions. The growth of these institutions within recent years has been a gratifying evidence of the spirit which actuates penal administration in this country. The Borstal system encourages growth of body and mind, and promotes both self-restraint and self-respect, so that it is natural, while very cheering, to know that a large majority of those who undergo it benefit permanently by the strong incentives to reform—tersely, they do well.

Annotations.

"Ne quid nimis."

THE BACTERIOLOGICAL STANDARDISATION OF DISINFECTANTS.

TWO years ago THE LANCET undertook an inquiry into the comparative value of the chief proprietary disinfectants on the market.[1] The aim of THE LANCET Commission was to evolve a method which would show working figures which *per se* could be subjected to criticism. By means of special apparatus and technique the method was elaborated so that by using more dilutions a broad curve of results was shown both with the disinfectant and the carbolic acid control. It was pointed out that a comparison of greater mathematical value could be made between the two, and the liability to error, as compared with the Rideal-Walker test, was very considerably reduced; at the same time mistakes due to errors of technique were disclosed and thus could not affect the result. We are of opinion that the claims then made were justified. On p. 1267 of this issue we publish a note by Mr. F. T. Marchant, Lecture Assistant in the Public Health Department of University College, London, in which he describes a further modification of technique making for greater simplicity. He proposes to substitute a modified separating flask to hold each of the mixtures of culture and graded disinfectant solution. At the necessary intervals a drop from each of the mixtures can be allowed to pass into the tubes of subculture medium. The suggested modification appears to be a good one. It would seem, though we have had no opportunity of testing it, to be exact in its working, and should give results as consistent as those obtained with the apparatus used by our Commissioners, over which in some positions it might have advantages. For example, it is clear that with this apparatus any type of organism may be used in the test. In certain circumstances this may be a distinct gain, but it must be remembered that for the purpose of comparing different disinfectants a standard organism must be decided upon, and we still maintain that B. coli communis is the one most suitable. By Mr. Marchant's method the broad curves of results we require can undoubtedly be obtained, and we would urge him, and those who follow this method, when testing a disinfectant, to remember the importance of this point—one on which we were very insistent—and give the full curve of results on which the comparative figures are based.

[1] THE LANCET, Nov. 13th, 20th, and 27th, 1909.

A "RETURN" CASE OF SCARLET FEVER.

AN action of considerable importance to the medical officers of isolation hospitals was tried recently by Judge Ruegg, K.C., at the Hanley county court. The plaintiff was the father of a boy who had been treated for scarlet fever in the Bucknall Infectious Diseases Hospital, and afterwards at the Bagnall Convalescent Hospital. The defendant was Dr. C. H. Phillips, who in the capacity of medical superintendent to the Stoke-on-Trent and Stoke Rural Joint Hospital Board had discharged the lad from the Bagnall hospital after a period of treatment in the two institutions amounting to eight weeks. The case for the plaintiff was that his son had been negligently discharged while still suffering from the disease, and that in consequence it had been communicated to other persons, one of whom was his father, the plaintiff. The case for the defence was a denial that the patient was suffering from scarlet fever or capable of communicating it when he was discharged; that the defendant acted in his official capacity and was not personally liable; and that every reasonable precaution was taken, the treatment being proper and according to the best known and recognised methods. The facts leading up to the litigation were that on his discharge the boy was taken home by his parents in a taxicab, that three days after his return his father developed symptoms of scarlet fever, and it was further stated that the child of a customer of the father who had carried a pair of boots away from his shop (the plaintiff being a bootmaker) had also contracted scarlet fever. The original patient, the son of the plaintiff, also developed scarlet fever again, his mother giving evidence that she found him to be peeling on making an examination after her husband was taken ill. Medical evidence was given on behalf of the plaintiff as to his illness and the condition of the lad when he was medically attended for his second attack, and the medical witnesses on both sides were asked a considerable number of questions as to the sources of infection in scarlet fever and in particular as to the extent to which infection should be ascribed to desquamation. The evidence of the defendant, who stated that as medical officer to the hospital board during a period of 25 years he had had under his care over 10,000 cases, was to the effect that the case was a mild one with no complication except that during the last fortnight there had been a slight sore inside the nose, which had caused him to retain the lad at the hospital when his discharge was first suggested to him after the patient had been for six weeks under treatment. In the eighth week there had been no discharge either from the nose or ears, and slight desquamation of the heel observed at the end of six weeks had ceased. He pointed out the possibility that in the course of the removal of the child in a taxicab the subsequent catarrh of the nostrils of which there had been evidence might have been brought on, and that a return case with fresh infectivity might have been the result. The evidence of Dr. Phillips was corroborated by expert evidence given by Dr. G. Reid, medical officer for the county, and details of the boy's treatment were deposed to by nurses. His honour Judge Ruegg, who tried the case without a jury, in giving judgment, said that in order to find for the plaintiff he must be satisfied that there had been negligence on the part of the defendant,

and expressed his difficulty in understanding how the boy could have been allowed to leave the convalescent hospital if at the time of his discharge he was manifesting the symptoms that he showed almost immediately afterwards, especially as he had been detained for an extra fortnight owing to conditions which admittedly had been observed. In all the circumstances he found that there was no negligence and gave judgment for the defendant with costs. It was intimated, in response to an appeal to that effect, that the question of foregoing costs would be submitted to the London and Counties Medical Protection Society, who must be congratulated in bringing a difficult and anxious case to a just conclusion.

THE NEW CALENDAR OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A NEW edition of the Calendar of the Royal College of Surgeons of England for 1911-12 is now published. The name of the late Sir George Sutherland Mackenzie, K.C.M.G., has been added to the list of donors and benefactors, and the Calendar states that he left by will a sum of £30,000, the income therefrom to be paid to his two brothers for their joint lives and the life of the survivor, and, on the death of the survivor, to be paid to the President and Council of the Royal College of Physicians of London and the President and Council of the Royal College of Surgeons of England for the purpose of providing the means of assisting qualified medical persons to pursue scientific medical investigation. The Calendar contains a statement of the number of candidates who were admitted to examination during the past collegiate year for the Fellowship, to the first, second, and third examinations, and to the examination for the licence in dental surgery respectively, with the results of the several examinations. The Fellows of the College now number 1518, an increase of some 30 names from that of last year, and include 1 elected "*ad eundem*," 6 "by election," 28 elected as Members of 20 years' standing, and 1483 admitted by examination. The oldest name on the Fellows' list is Mr. Peter Redfern of Belfast, who was admitted a Fellow in 1851, and it is of interest to note that Lord Lister's name figures next on the list. He became a Fellow in 1852. The Members' list contains 16,929 names. The oldest Member is Mr. Edgar Jones, of Great Burstead, Essex, who became a Member as far back as 1834, and who is now in his 102nd year. The Licentiates in Dental Surgery and the Diplomates in Public Health are still increasing in numbers. Particulars of the various College prizes are included in the Calendar, and for the first time an extended index has been added, thereby increasing its usefulness for reference purposes.

SUPPURATION IN THE ACCESSORY SINUSES OF THE NOSE.

IN the issue of THE LANCET of last week we published a report of a paper by Mr. Herbert Tilley at a meeting of the Medical Society of London on acute and chronic suppuration in the nasal accessory sinuses. It is curious how little was known a few years ago about the diseases of these sinuses even by those who devoted special attention to the diseases of the nose. With the advances in our knowledge we have learnt in the first place how very frequently these suppurations occur, and how often their existence is entirely unsuspected. A recurring morning headache and a slight nasal discharge may be all the symptoms of which the patient is complaining, and yet for years he may have had an extensive suppuration in one or more of the accessory sinuses. Not rarely indeed the patient's health may have been so good that he may boast that he has never had a day's illness in his life; doubtless in such cases as these protective processes have been going on, with the result that he has become protected against the germs affecting the sinuses and their toxic products. Not only has our knowledge of these sinuses increased, but our power of dealing satisfactorily with them has increased also. The extent and ramifications of these accessory cavities are so widespread and numerous that it is easy to see that special skill and knowledge are required to deal with them. The antrum of Highmore is comparatively easy of access, and it is of interest to note that Mr. Tilley considers that the canine fossa is the best route by which to drain most cases of antral suppuration, and that he condemns unreservedly any attempt to drain a chronic suppuration through the buccal socket of a tooth. The frontal sinus presents difficulties greater than those connected with the antrum, and in this case the importance of a cosmetic result is greater, but it is when we consider the deeper sinuses, those of the ethmoid and of the sphenoid bones, that we are able to appreciate the skill needed in treatment. Structures of the most vital importance are almost immediately in contact with these sinuses, only a few millimetres intervene between the sinus wall and the base of the brain, and a small error in the use of an instrument may cause serious injury. At present the necessity for immediate radical operation is not urged quite so intensely as a few years ago, for it is now known that in a certain proportion of cases less energetic measures may be followed by success, yet there are cases in which rapid and thorough operation is needed for recovery.

"TOUJOURS PERDRIX."

ONE of the most interesting observations made in regard to a strict monotony of diet is that the digestive functions readily adapt themselves to it. But if, after this digestive adaptation has been established and a peaceful appropriation of certain food substances is ensured, there is introduced something new, the system breaks down. If, for example, an exclusive meat or milk diet is suddenly changed to one consisting entirely of farinaceous foods (bread or potatoes) there invariably happens a severe dyspepsia, because the kind of digestive aid which these require for digestion has not been invoked recently, and some time elapses before the particular demand is answered. In short, each kind of food demands an agent (ferment) endowed with a specific digestive force. A consideration of this fact would seem to indicate that a policy of *toujours perdrix* is often right, at all events when for some reason the diet has to be confined to particular food substances. But, of course, when such a restricted diet is called for the health of the individual is not normal. Physiological observation is not opposed to a monotony of diet, but it is reasonable to suppose that digestive adaptation would follow the adoption of a uniformly regular dietary rythmical in its variations. Persons of regular dietetic habits are often heard to say that a change in food upsets them. Dyspeptic troubles are a frequent complaint of travellers abroad where food is different and served in a different manner from what they are accustomed to. These persons are too quick to complain. In course of time a digestive adaptation ensues, and digestive troubles disappear. Successful digestion involves, however, a psychological factor. In addition to the physiological expediency of a mixed diet the relish or zest inspired by the pleasant appearance and attractive taste of food is an important quality. Without appetite the digestive process is prone to become dilatory, and when food begins to pall upon the palate it is a sign that the digestive functions are satiated also: the limit has been reached and excess has been begun. Hence the mixed diet, mixed to a reasonable extent, is a necessity.

place being found for several classes of foods, each having a distinct and separate food value, and each prompting the gastric functions to maintain an all-round digestive capacity. But the source of protein need not always be mutton, nor the source of carbohydrate potatoes, for then the pyschological factor ceases to serve, and monotony produces a true physiological revolt. Some people complain that the cycle of meat foods is a very small one, and so it is, especially with the working classes, whose choice is restricted to beef and mutton and pork. The art of cookery can, however, do much to relieve the boredom of diet, and on every ground more attention should be given to it.

ADENOIDS AND TONSILS.

IT would be difficult to mention a surgical operation more productive of benefit when efficiently performed in suitable cases than that for the removal of adenoids and tonsils. It would be equally difficult to mention one more often performed with little ceremony and with results by no means coming up to what is expected of it. This opinion has been held for some years by many men of experience and authority in the profession. The treatment of enlarged tonsils and adenoids, and of the conditions to which they give rise, has been frequently under discussion during recent years. At the Sheffield meeting of the British Medical Association in 1908 the Section of Laryngology, Otology, and Rhinology discussed this matter, and the sense of the meeting was to the effect that the benefits which it was predicted would result from the removal of adenoids in individual cases were far from being generally obtained. Some speakers attributed this failure to the operations being insufficient. Last year, when the Association met in London, the removal of the tonsils was again discussed, and one speaker stated that in a certain throat department a black list was kept of hospitals where tonsils had been removed and the patients had come for treatment owing to recurrent symptoms; the list, it was stated, was impartial and nearly every throat department in London was represented. In reply it was objected that such statistics of unsatisfactory results were of little value, because they were drawn from hospital out-patient practice, and everyone knew that in most clinics the out-patient department was so overworked and the skilled assistance so insufficient that few senior members of the staffs viewed the results with complacency. At the recent meeting of the British Medical Association at Birmingham a discussion on the treatment of chronic adhesive processes in the middle ear occasioned some appropriate remarks bearing on this matter. One speaker said that in reading the reports upon school children he had been struck by the proportion of cases in which the diagnosis of enlarged tonsils had been made without any mention of adenoids. The natural inference was that the tonsils had been removed by the practitioner, and that the more important factor, the adenoids, had been left, which was greatly to be regretted from the point of view of prophylaxis.[1] From the proceedings of the Section of Laryngology of the Royal Society of Medicine it is evident that, far from the operation being at times insufficiently extensive, too much zeal, on the contrary, has been displayed. Cases have been brought under observation presenting bands of adhesion between the Eustachian tube and the pharynx. The question arises whether they are due to disease or to traumatism. It was pointed out that a little less operative zeal in those corners might prevent a few of those cases.[2] At times cases of malformation of the soft palate and uvula resulting from the removal of tonsils and the attempted removal of the adenoids come under notice.[3] However simple the operation may appear to be, accidents may arise even in the hands of the experienced, but it would be as well for all of us to realise that the operation is by no means so simple as it looks. The lack of ceremony previously referred to has apparently attracted the attention of the laity. A lay contributor to the *British Journal of Nursing* for Sept. 23rd last, in an article on the after-care of operations on out-patients, criticises warmly the way in which children recently operated upon for adenoids and tonsils find their way, still bleeding, into public conveyances, with nothing better to mop the blood trickling from the nose than a very grimy kerchief. Many doubtless have witnessed this sight and its occurrence cannot be ignored. The author concludes her article with a practical suggestion which is doubtless already practised in some of the special hospitals. This suggestion is that "before out-patients leave the hospital after operations for the removal of tonsils or adenoids a sterilised gauze dressing shall be applied over the nose and mouth, and a regulation packet of sterilised dressings shall be provided for each patient's use." It is added that these dressings might take the form of squares of gauze for keeping clean the mouth and nose until convalescence, and that these precautions should be extended to operations on the ear. However skilfully the operation may be performed good results are jeopardised by the lack of attention to the after-care, though everyone knows how difficult it is to have the instructions for after-care carried out even when they are handed to the patient in print. Failure in realising at times the results predicted must be attributed partly to practitioners promising too much, and partly to its not being generally recognised that in cases of long standing the evils that adenoids and tonsils do live after them. It would be well if it were more commonly recognised that the satisfactory removal of adenoids and tonsils calls for genuine skill, and that a nicety of judgment must decide as to whether they should be interfered with or left alone.

[1] THE LANCET, August 12th, 1911, p. 448.

[2] Section of Laryngology, Royal Society of Medicine, Jan. 7th, 1910, p. 69.

MEASLES AND VENTILATION ON BOARD SHIP.

A PAPER on "The Ventilation of Emigrant Ships," by Dr. P. H. Bryce, chief medical officer of the Department of the Interior in Canada, appears in the *Journal of the American Public Health Association* for September. He there tells a story which shows how generalised an infection may become when once it is introduced into a community very closely packed together and without adequate ventilation. An emigrant ship left Rotterdam on June 13th for Canada. At that busy time of year she probably carried passengers nearly to the limit of her statutory capacity. On June 14th, the day after sailing, a child developed measles, and was immediately isolated with the whole of its family, but in the short interval it had done all the mischief it could. In the same compartment with it were 51 families, 279 persons in all, and amongst them the second case appeared on the thirteenth day, June 26th, which was the day of arrival in Canada. Twenty-one more cases were recognised the same day before the ship arrived at quarantine, and another dozen were seen before 9 P.M. that night. In all 71 cases developed, and from that single case Dr. Bryce tells us "every non-immune person [in that compartment] was infected within the short space of twenty-four hours." Fifteen families wholly escaped, but their members were either grown up or protected by previous attacks. The cubic space available for each person was probably the same as in English emigrant ships, 105 cubic feet on a deck 7 feet high, and if we may suppose, as is not unlikely, that this ship was no better

[3] See Section of Laryngology, Royal Society of Medicine, April 1st, 1910, p. 131.

ventilated than that on which Dr. Bryce crossed when he found 10 to 12 parts of carbonic acid per 10,000 volumes of air, the hourly ventilation supply for each person cannot have been more than 700 cubic feet. Propinquity—that is, small cubic space and close neighbourhood—accounted for the spread of the disease to the nearer children, but the dissemination of the infection to the remote corners of the compartment occurred because the infective particles were not quickly enough carried away in a good flow of air as they should have been, but were left to diffuse themselves everywhere throughout the air of that passenger deck. And we would put it to shipowners—whether it is more expensive to pay for dealing with 71 infectious cases and the isolation for the necessary time of 36 families, or to put satisfactory ventilation on board and so minimise these risks. And by satisfactory ventilation we mean for each adult 1300 cubic feet of properly warmed air per hour suitably introduced into, and removed from, the compartment. The more numerous are the inlets and the outlets the more directly and quickly will the used and, in these cases, infected air be removed, and the smaller chance will there be of the spread of infection.

THE MEDICAL RECORD OF MANCHESTER GRAMMAR SCHOOL.

OUR Manchester correspondent some weeks ago described the work done by Dr. Alfred A. Mumford in reporting a year's record of the health of the boys in considerable detail. Every boy has a medical record card which not only notes the result of medical examination, but also the boy's games, out-of-school occupation, way of travelling to and from school, and a number of other points. We cannot but be struck, as our correspondent was, with the thorough nature of the medical supervision exercised as compared with what is possible in elementary schools, and return to the subject from this point of view. Since 1905 boys from the ordinary elementary schools have been admitted to the Grammar School in considerable numbers. Very interesting, therefore, is Dr. Mumford's careful and accurate comparison both of physical conditions of the boys and social conditions of the parents. The alleged change in social condition is shown by a comparison of two groups of parents of 1285 boys in the period 1881–86 and in 1905–10—that is, since the admission of elementary scholarship boys. The cases chosen are taken consecutively from the school register and are classified according to the parents' occupations :—

Occupation of parents.	1881–86.	1905–10.
Professional	22·2 per cent.	23·5 per cent.
Retail trade	11·0 ,,	11·0 ,,
Higher mercantile	33·0 ,,	25·0 ,,
Lower mercantile	11·0 ,,	21·9 ,,

Higher and lower mercantile indicate positions in business of greater and less responsibility. The rest of the parents belong to smaller groups. A comparison of the physical and health conditions of the boys shows a decided advantage for the period since the beginning of the scholarship system. At age 16 the boys are 1½ in. taller and 8 lb. heavier than a generation ago. Chief among the causes which have led to this result Dr. Mumford puts "the steady diminution or postponement of early infectious disease in childhood, due to the progressive operation of the Public Health Act of 1875." A second cause is indicated in the changed attitude towards athletics, and other factors are better housing, "increased knowledge and use of foods," and "a greater insight into the meaning of parental responsibility as regards health." With regard to infectious disease, Dr. Mumford traces its ill-effects particularly on vision, and gives a table showing that there is a direct relation between infectious illness in childhood and defective vision later. The value of this excellent report would have been increased had the results of a more detailed comparison between present "free" scholars and the other boys been given. The weight comparison given can only be doubtfully accepted as a test of good physique and well-being.

KALA-AZAR AND THE MOSQUITO.

IN another part of the present issue (p. 1268) will be found an interesting communication by Professor Franchini of Bologna as to the mosquito being the intermediary host and transmitting agent of kala-azar to man. He sets out the details of some experiments carried out by him with the view of demonstrating that in the alimentary tract of anopheles the parasitic organism of the disease can live and multiply; and surmises that as kala-azar is largely found in malarious districts the mosquito is, in all probability, the usual carrier of the infection. Professor Franchini infected his mosquitoes by feeding them on cultures of leishmania, but in his preliminary paper he does not, of course, suggest that this mode of infection could occur in nature. It is fair to point out that Professor Franchini states that further research upon the subject is required, to ascertain, for example, in what part of the mosquito's alimentary tract the leishmaniæ live and undergo multiplication, and to find out if the insect can transfer the infection from one animal to another after being fed on infected blood. These and other problems connected with this most interesting and important subject will no doubt be reported upon by him when he has carried out the further series of experiments referred to by him in his paper. As most readers of THE LANCET are doubtless aware, there are three varieties of the leishmania infection now classed under the general term of leishmaniosis (named after the distinguished discoverer of the protozoal parasitic organism). The first is the kala-azar met with in India, China, and other parts of Asia, in which the infecting parasite is known as leishmania donovani. This is a very fatal form of the disease. The second is known as infantile kala-azar, and is met with along the shores of the Mediterranean Sea and elsewhere, the infecting organism being the leishmania infantum; it is of a more benign nature. Lastly, there is the variety of the malady met with in North Africa, the Near East, India, and in other parts of Asia under the name of oriental sore, Delhi boil, or Bagdad sore, the parasitic cause being leishmania tropica. Professor Franchini does not state which one of the three forms of leishmaniosis is, in his opinion, transmitted by the anopheles, or if all the forms are equally transmissible in this way. Probably it is leishmania infantum, the variety found in Southern Italy, to which he refers. In the introductory part of his paper he adverts to negative results obtained from experiments on the bed bug (cimex lectularius), the dog flea (pulex serraticeps), the human flea (pulex irritans), and the head louse (pediculus capitis), but this position is hardly consistent with the reports of Nicolle, Basile, Pianese, and others who have shown that the dog in Tunis and other parts of the Mediterranean littoral suffers naturally from the same disease which attacks children and which is caused by leishmania infantum, and further that this parasite can be transferred from dog to dog or from dog to man by the dog flea and sometimes by the human flea. Basile, for example, took laboratory bred puppies and allowed infected fleas to feed upon them, with the result that they became infected and died from the disease, the leishmaniæ being found in the bodies of the puppies. Dogs, therefore, may serve as reservoirs of the parasite, and any blood-sucking insect like the mosquito, as suggested by

Professor Franchini, may upon occasion transmit the disease from the dog to man. Nicolle believes that the dog- and the human-fleas are the common transmitting agents of leishmania infantum. In India it has so far been found impossible to infect dogs or any other animal with leishmania donovani. Rogers, Patton, and others regard the Indian bed bug, cimex rotundatus, as, in all probability, the usual carrier of kala-azar to man, though occasionally the conorrhinus subfasciatus, a plant-feeding bug generally, but which at times becomes a blood-sucker, may act as the transmitting agent. As regards the leishmania tropica, Dr. R. Row has recently in India brought forward evidence in support of the view that the domestic fly is the actual carrier of this parasite to man. There is nothing improbable in the idea that leishmania in any of its three forms may be spread by one or another kind of biting insects—ticks, lice, bugs, fleas, mosquitoes, or even by flies—but, except as regards the bug in India and the flea in North Africa and the Mediterranean littoral, there has been no direct evidence brought forward to inculpate other biting insects. Professor Franchini's paper opens up a new field of investigation, and we hope to have from him before long further information as to his incrimination of the anopheles. For those who are interested in the subject we refer them to a critical review of Kala-Azar and Tropical Sore by Colonel Sir W. B. Leishman, F.R.S., R.A.M.C., published in the *Quarterly Journal of Medicine*, Vol. V., No. 17, October, 1911.

GONORRHŒAL PERIOSTITIS OF THE LONG BONES.

GONORRHŒAL affections of bone are much less common than gonorrhœal affections of joints. The epiphyses and small bones of the hands and feet are the most frequently affected. Periostitis of the diaphyses is so uncommon that it is unmentioned in most text-books, and its existence has been disputed. In the *Journal of the American Medical Association* of August 19th Professor Stephen H. Watts has reported the following case. A man, aged 24 years, was admitted to the Johns Hopkins Hospital on Jan. 2nd, 1907, complaining of an abscess in the left thigh. His illness began with gonorrhœa four weeks before. Two weeks later a swelling appeared in the left thigh and became painful, hot, and hard. As he could not use the leg he remained in bed for a week before admission and the discharge ceased. He lost appetite, was constipated, and had night sweats. A bubo appeared on the left side, but disappeared without discharging. On examination he was healthy-looking; the temperature was 103·6° F., and the pulse 80 and of good volume. The leucocytes numbered 12,400. There was purulent balanitis, and the pus contained gonococci. On the anterior and outer aspects of the middle third of the left femur was a tender indurated area 10 by 14 centimetres, apparently an abscess beneath the quadriceps. The skin was hot but not reddened. The hip and knee-joints were normal. An incision 14 centimetres long was made over the swelling. The muscles were separated, and the swelling was found to be due to a small collection of turbid but not purulent fluid beneath the periosteum. It contained the gonococcus in pure culture. The periosteum was very thick, œdematous, and lined by velvety granulation tissue. The exposed bone was slightly roughened by deposits of new osseous tissue. The wound was irrigated with mercury bichloride and packed with iodoform gauze. Sections of the thickened periosteum were examined by Dr. W. G. MacCallum who reported: "The section shows some new-formed bone embedded in a great deal of very vascular granulation tissue. Outside of this there is muscle, the individual fibres of which are separated by the same granulation tissue. No definite organisms can be seen." After the operation the temperature ranged up to 102° and there was a small amount of purulent discharge. The whole of the thigh was swollen and the femur seemed to be thickened and tender. A skiagram showed deposits of new bone about it. The patient improved and the thigh became less swollen, but the bone seemed thicker than ever. In the middle of February the wound healed and he could walk, but the femur remained greatly thickened. He was discharged. He was seen again in August, when his general condition was good, but there were great thickening of the femur and a small sinus in the middle of the scar. He was then lost sight of. Gonorrhœal affections of the periosteum were first described in 1869 by Fournier. He distinguished periostitis and periostosis, the former being simple inflammatory deposits in the periosteum, the latter being tumours resulting from infiltration between the bone and periosteum. He insisted on the much greater frequency of periostitis, which produces slight circumscribed ephemeral swellings most frequently on the tibia just above the insertion of the sartorius, on the lower end of the humerus, on the upper end of the fibula, on the great trochanter, on the posterior surface of the os magnum, and on the extremities of the metacarpal and metatarsal bones. The only symptoms are pain in a circumscribed area, with perhaps a little œdema and tenderness of the overlying skin. Gonorrhœal periostitis is frequently associated with gonorrhœal arthritis.

THE RISKS OF INTRAVENOUS INJECTION OF SALVARSAN.

AT a meeting of the Académie de Médecine of Paris on Oct. 10th M. Hallopeau reported a case in which death followed the intravenous injection of salvarsan by a practitioner who rigidly followed the rules laid down for its administration. The patient was a robust, well-developed man, aged 35 years, who contracted syphilis in 1902. He had been addicted to alcohol, but had abandoned the habit for two years. He had in succession a chancre, roseola, mucous patches, and a relapsing palmar and plantar psoriasiform eruption. He was treated at first with mercury and then with 10-centigramme injections of hectine without effect on the eruption—a result probably due to the fact that the dose was too small. In July, 1911, three months after the last injection, he demanded treatment by salvarsan. An intravenous injection of 30 centigrammes was given and was well borne. On the sixth day an injection of 40 centigrammes was given. After a few minutes he was seized with a sensation of dryness in the throat, accompanied by congestion of the face and anguish. These symptoms lasted some minutes. He was able to take a walk in the afternoon without any feeling of malaise. In the night he suffered from nausea, which was followed by vomiting. On the following night the same symptoms recurred, and on the next day he was seized with anguish and convulsions. The temperature rose to 101·3° F. The pulse was normal and strong. Several attacks of convulsions with chewing movements followed; the eyes were turned upwards and to the left. There were congestion of the face, tremor of the upper limbs, and clonic and tonic spasms, and the temperature rose to 104°. In the night he gradually became comatose and died in an attack of convulsions. The short interval between the second injection and the appearance of the symptoms suggested that they must have been due to the salvarsan, but the reason for their occurrence was not evident. The patient showed no signs of visceral disease. It might be suspected that his previous alcoholic habits had caused some change in his liver, but of this there was no indication. Similar cases have been recorded by other observers, and others have

occurred which have not been published. In a case recorded by B. Fischer, slight changes were found in the liver at the necropsy, indicating former alcoholism. M. Hallopeau concludes that salvarsan should not be given to persons who have been addicted to alcohol, even though they have abandoned the habit for some time. He went, as a matter of fact, much further and suggested that a drug which in ordinary doses might prove fatal to persons in no danger should have no place in routine therapeutics. In the discussion which followed he was supported by Professor Gaucher, who declared that he knew similar cases. He insisted that salvarsan does not cure syphilis but only certain manifestations of it, particularly ulcerative lesions, and does not prevent relapses which are almost constant. He passed his time, in hospital and private practice, in seeing patients on whom salvarsan produced no, or only a temporary, effect, and believed that patients thought themselves cured by it, and after one or several injections were lulled into a false sense of security. If they then followed no other treatment they were exposed to worse consequences.

THE ROYAL INSTITUTE OF PUBLIC HEALTH: BERLIN CONGRESS, 1912.

THE Council of the Royal Institute of Public Health has accepted an invitation from the Lord Mayor of Berlin to hold its Congress in 1912 in that city, from Thursday, July 25th, to Sunday, July 28th, inclusive, and a local general arrangements committee has been formed, consisting of representatives of the Royal Ministry of the Interior, the Imperial Board of Health, the City of Berlin, the medical officers of the Headquarter Staffs of the Army and Navy, the University of Berlin, the medical and hygienic societies of Berlin, &c., to promote the success of the meeting. The Congress will be under the Presidency of Earl Beauchamp, His Majesty's First Commissioner of Works, and will be conducted in the following sections:—A, State Medicine (President, Sir T. Clifford Allbutt); B, Bacteriology and Comparative Pathology (President, Professor G. Sims Woodhead); C, Child Study and School Hygiene (President, Sir James Crichton-Browne); D, Military, Colonial, and Naval (President, Sir Ronald Ross); and E, Municipal Engineering, Architecture, and Town Planning (President, Mr. P. C. Cowan, Chief Engineer of the Local Government Board, Ireland). The various Congress and sectional officers will also include distinguished scientific and municipal persons of German nationality. Facilities will be afforded for visiting the various public health and educational institutions in Berlin, and the opportunities thus given to representatives of municipalities, county councils, and other sanitary authorities of the United Kingdom for becoming practically acquainted with institutions in the work of which they are concerned should be of the greatest value. Mr. James Cantlie, honorary secretary of the Institute, informs us that arrangements are being made for travelling and hotel accommodation at reduced charges, the subscription for each delegate being one guinea.

THE King has given to the undermentioned gentlemen His Majesty's authority to accept and wear the decoration of the First Class, Third Division, Imperial Chinese Order of the Double Dragon, which has been conferred upon them by His Majesty the Emperor of China, in recognition of valuable services rendered by them during the recent epidemic of pneumonic plague—namely, Mr. William Harold Graham Aspland, M.D Toronto, F.R.C.S. Edin., medical professor at the Union Medical College, Peking; Mr. John Maitland Stenhouse, M.B., B.C. Cantab., of the Union Medical College, Peking; and Mr. Bernard Score Browne, M.B., Ch.B. Edin., of the Church Missionary Society Hospital, Ningpo.

THE annual dinner of the Harveian Society of London will be held at the Café Royal, Regent-street, on Thursday, Nov. 9th, at 7 for 7.30, when the chair will be taken by Mr. Ernest Lane, the President.

THE First International Eugenic Congress will be held at the University of London from July 24th till 30th, 1912, under the presidency of Major Leonard Darwin, who will be supported by a number of vice-presidents of international reputation. These include the Lord Chief Justice of England, the Presidents of the Royal College of Physicians of London and of the Royal College of Surgeons of England, the Principal and Vice-Chancellor of the University of London, and representatives of the United States and of the great European countries. The papers will be grouped into four sections: (1) The bearing upon eugenics of biological research; (2) the bearing upon eugenics of sociological and historical research; (3) the bearing upon eugenics of legislation and social customs; and (4) the consideration of the practical applications of eugenic principles. The Congress will be organised by the Eugenics Education Society, and all communications should be addressed to the honorary secretary, 6, York-buildings, Adelphi, London.

MOTORING NOTES.

BY C. T. W. HIRSCH, M.R.C.S. ENG., L.R.C.P. LOND.

The Olympia Motor Show.

THE Tenth Annual Exhibition of Motor-cars organised by the Society of Motor Manufacturers and Traders is now open, and the medical man in search of a motor will find many from which to select. For our well-to-do colleagues there are the cars costing many hundreds of pounds, and alongside others priced at but a tenth part of such a sum. As a result of a careful walk round on "press" day I was convinced that the man must be hard to please who cannot find some car among the many shown which will meet with his approval.

The general arrangement of exhibits follows the plan proved to be satisfactory in the past, but a slight alteration has permitted bringing together in one group the individual displays of the body-builders. Entering the hall from Addison-road, chassis and cars will be found at the eastern and central portions of the ground floor. At the western end the body-building firms maintain the traditional reputation long ago secured by British carriage-builders. The popular torpedo flush-sided bodies, landaulettes, limousines, and cabrio-landaulettes are all shown in a remarkable variety of forms, and among many attractive designs, which are bound to draw attention, are the productions of Messrs. Mulliner, Morgan and Co., Messrs. Vincent of Reading, Messrs. Hora of Peckham, The Connaught Motor and Carriage Co., Limited, Messrs. Brown, Hughes, and Strachan, Messrs. Maythorn, Messrs. W. and F. Thorn, and Messrs. Alford and Alder. Adjoining the Hammersmith-road entrance, and immediately opposite, on the northern side of the hall, are electric lifts which convey visitors to the galleries, where a whole day can be spent amidst a multitudinous array of engines, parts, and accessories. The south gallery is devoted to exhibits of tyres, detachable wheels, and rims.

A good many medical friends have questioned me as to the best car. I feel inclined to reply, like the critic did in *Fanny's First Play*, when requested by the father to give an opinion on his daughter's work: "Tell me who it is by and I will tell the sort of play it is." So in the case of cars, the makers' names help in arriving at a conclusion. The following, among others, should certainly be looked at by the doctor visiting Olympia with a view to the purchase of a new motor: The Adler,

which in addition to its excellent design has body-work by Messrs. Morgan; the Albruna, shown by Messrs. Brown Brothers, of Great Eastern-street, London, E.C., the smaller one of which seemed to me to be an ideal two-seater; the Argyll, an old favourite with the profession, and now fitted with a sleeve-valve engine, with combined reciprocating and partial rotary motions, and regarding which I hope to give a detailed account on another occasion; the Arrol Johnson, the Austin, the Belsize, the two- and four-cylinder Briton; the Charron, sold by the London Motor Garage Co., Limited, of Wardour-street, who issue inclusive maintenance contracts covering every expense connected with the car; the Daimler with the Silent Knight engine, which was described in THE LANCET of April 15th, 1911; the Darracq, of which cheap and trustworthy car five types are shown, the 11-h.p. costing complete with a two-seater body but £195. Their other types have a worm drive, and one model has a cylindrical distributer which does away with valves, spring tappets, and cam shaft. The De Dion, as always, are well to the fore with their 6 h.p. single, and 7 and 9 h.p. two-cylinder cars. Messrs. Humber have a 5½ h.p. air cooled two-cylinder two-seater, which costs but £95; and they also show 11, 14, and 12–20 h.p. cars. Other excellent cars are the 17 h.p. Maudslay, the American Mitchell, the Napier, the Panhard, the 6 h.p. Pilot, the various Renault models, especially their little two-cylinder 8 h.p. and four-cylinder 12 h.p., the satisfactory Rovers, including the old and popular 6 h.p. poppet valve, and the newer 12 h.p. two-cylinder Silent Knight, the Star, Straker Squire, Swift, Talbot, Vauxhall, and Wolseley. All these cars are the work of old-established makers, and any one of them has a name which is a guarantee of good workmanship. The single- and two-cylinder cars certainly maintain their previous popularity, and this type has many points for the medical man who merely desires a car for professional use, which he can look after and drive himself. In external appearance engines now approach towards an oblong block, with valve stems and springs enclosed. The poppet valve, I am glad to note, is still popular, though there are many devotees to the sleeve and rotary type. The efficiency of an 80 mm. bore has directed the designer's attention to smaller sizes, and many chassis are shown carrying engines to be known as 11·9, smaller editions of the popular 15·9. Undoubtedly the smaller one is fitted for a two-seater, but I do not think it should be expected to carry heavy four-seated bodies. Lubrication devices have certainly improved, and to-day the motorist replenishes his oil tank less frequently than his petrol container, and if too much or too little be given simple tell-tale signals instantly inform him of the fact.

Automatic carburetters are also general, and the fuel consumption is probably now at a minimum. The leather-faced clutch still holds its own against the multiple disc, and this is to be welcomed, especially as the leather is attached in sections and can be easily replaced when worn. Declutching is no longer laborious, thanks to lighter springs and compound leverage. The demand for greater flexibility of control has introduced more four-speed gear-boxes, which enable a better average speed to be maintained in hilly districts. On nearly all the cars the final transmission is by a propeller shaft and bevel or worm drive. In the worm drive many place the driving worm above the driven worm wheel; this may not be as easily lubricated as when the driving worm is below, but it gives greater road clearance and saves wear on the universal joints of the cardan shaft, keeping the propeller shaft more horizontal.

Comfort for passengers on cheap as well as expensive cars, in the matter of a well-sprung chassis, hardly admits of further improvement, but the addition of such devices as shock absorbers makes cars so fitted travel with luxurious smoothness. Moreover, the tyres are always in contact with the road surface, and thus their life is prolonged. Tyres are, of course, of the first interest to the motorist, and the Dunlop, Continental, Michelin, Spencer-Moulton, and Stepney road grip, in addition to being as good as ever, have this advantage—they are much cheaper. Of lamps, many are shown, and for medical men I must confess I like the electric, such as shown by Messrs. Longstreth's, C. A. Vandervell and Co., and Brown Brothers. Messrs. Vandervell's dynamo to be driven off the motor seemed light, neat, and simple.

Thomson Bennett show a useful exhaust car-heater, in which the heat could be regulated, and which would be ideal for work in winter. Harvey Frost show their vulcanisers, which are useful for prolonging the life of inner tubes and covers. For tubes, too, "Quick Patch" patches are of value.

PLAGUE AND FEVER PREVENTION IN INDIA.

MOST people know that during the last 10 or 15 years India has been visited by severe outbreaks of plague and malarial fever that have caused an enormous loss of life. This has probably been far less than had been the case in old-time epidemics before statistics were published or even thought of. Nevertheless, the continued prevalence of plague in many parts of the country, and the recurrence of malarial outbreaks of great severity, had naturally caused some anxiety. Opportunity was taken in September, in reply to a question at the Imperial Legislative Council at Simla, to give a succinct account of what has actually been done, and is now in course of being carried out by the responsible authorities to safeguard the health of the country.

Statistics.

It has often been said that sanitation is based on statistics, it being implied that the statistics are trustworthy. As far as a great part of India is concerned it has to be admitted that the registered causes of death are very misleading. It is therefore not possible to indicate accurately the direct effects of malaria and plague prevalence on the growth of the population. Nevertheless, the provisional figures of the 1911 census, which show an actual reduction in the populations of the United Provinces and of the Punjab since 1901, are evidence of the terrible severity of the visitations of these two diseases. Plague chiefly shows itself in greatly increased mortality; epidemic malaria, besides this, causes a great diminution in the births during the year following the outbreak. The United Provinces, where there had been famine in 1905–08, in this latter year were devastated by the most severe epidemic of malaria that had ever been known; during the decade (1901–10) more than a million and a half people died from fever *in excess* of those who had died from this cause in the preceding decade. In the same period the plague deaths numbered over 1,300,000. The Punjab also suffered severely, the deaths from plague and malaria during the ten years 1901–10 having been more than a million and three-quarters in excess of those due to these two diseases in 1891–1900.

Work and Discoveries in India.

The Sanitary Commissioner calls to mind the fact that almost the whole of the knowledge on which efficient and precise measures against fever and plague are based is the result of action taken and discoveries made in India. With regard to the former disease the extensive development of cinchona plantations has been the chief means of bringing about such a fall in the price of quinine as to make it available for the poorest peasants; the Indian Government also started the plan of selling doses of quinine for the smallest coin current in the country (pice packets). Again, the discovery of the mode of spread of malaria was the work of an Indian medical officer, Sir Ronald Ross; it is entirely owing to this discovery that precise and rational preventive measures have been made possible. As regards plague, the discovery and provision of preventive inoculation, the recognition of the part played by rats in the epidemiology of the disease and of the mode of infection and conveyance by the rat-flea have placed preventive measures on a rational basis.

Preventive Measures.

In 1909 a conference was held at Simla to consider the question of malaria in all its bearings; a permanent organisation to deal with the matter was established, consisting of a central scientific committee, provincial committees, and a general committee, consisting of the central body combined with delegates from the various provincial committees. It was decided that the first requirement was a knowledge of all the circumstances connected with the disease as it presented itself in different localities. As a result, in the early

part of last year, a Malaria Bureau was established at Kasauli, near Simla; and at Amritsar, in the Punjab, a permanent laboratory was established, where classes of instruction for medical officers and subordinates have been held, under Major S. R. Christophers, I.M.S. These specially trained experts have been distributed throughout the different provinces, their work being entirely devoted to the investigation of malaria and its prevention.

In Madras an officer has been specially deputed to inquire into the causes of variation in intensity of malarial prevalence in Jeypore (Vizagapatam); much anti-malarial work on the usual lines has been carried out in different directions; and a Malaria Board and special malaria officer are to be appointed. In Bombay a provincial committee has already been formed for this purpose. Dr. C. A. Bentley has carried out an exhaustive investigation as regards the city of Bombay, his final report having just been published[1]; and many individual investigations have been made in selected districts. In Bengal a specially trained officer has been appointed, with a staff of assistants, for research work; draining has been carried out in several towns, and quinine freely distributed. In the United Provinces two medical officers have been appointed for research; a provincial and eight divisional committees are at work making inquiries, educating the people, and popularising the use of quinine; in four specially selected districts travelling dispensaries have toured from village to village giving medical relief.

In the Punjab, in addition to the establishment of a provincial committee and chief malarial officer, Major Christophers was specially employed in 1909 to investigate the very severe epidemic prevalence. His report has just been published, showing that periodical flooding has been an important factor, and that preventive measures are quite practicable. In Eastern Bengal and Assam Major Christophers and Dr. Bentley inquired into the incidence of blackwater fever; their report of 1908 settled many vexed questions regarding its etiology. Their recommendations have been carried out by a large number of planters in the province, and great improvement in regard both to blackwater fever and malaria has already resulted. Consequent on a second report by the same officers on malaria in the Duars in 1909, a committee has been appointed to inquire into the sanitary and economic conditions of the tea-garden coolies. In the Central Provinces and in Burma committees and special investigation officers have also been appointed.

Similar action, *mutatis mutandis*, has been taken with regard to plague prevention. A yearly grant of 30 lakhs of rupees (about £200,000) has been devoted to the improvement of sanitation, with special reference to plague. In the present financial year an additional special grant of 57 lakhs has been made for expenditure chiefly on drainage schemes likely to improve malarial conditions in towns.

This brief recital of the more important, though not by any means of the whole, of the measures adopted by the Government of India in regard to disease prevention will show that the Imperial authorities are fully alive to the importance of preserving the health of the community, and are grappling with the inevitable difficulties in a scientific and statesmanlike fashion. In such a vast area, with such widely differing local conditions, there can be no sudden cessation of epidemic disease from Cape Comorin to the Himalaya; but improvement has already been very perceptible, and we feel assured that it will be progressive.

[1] THE LANCET, Oct. 28th, 1911, p. 1221.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The annual meeting of Fellows and Members will be held at the College, Lincoln's Inn-fields, on Thursday, Nov. 16th, at 3 o'clock P.M., when the report of the Council will be laid before the meeting. Fellows and Members can obtain copies of the report on application to the secretary, and can, if they so desire, have their names placed on the list of those to whom the report is sent annually. Motions to be brought forward at the meeting must be signed by the mover, or by the mover and other Fellows and Members, and must be received by the secretary not later than Nov. 6th. A printed copy of the agenda will be issued to any Fellow or Member who may apply for one on or after Nov. 13th.

THE LONDON COUNTY COUNCIL AND THE DENTAL TREATMENT OF SCHOOL CHILDREN.

A REPORT was presented to the Education Committee of the London County Council on Nov. 1st with regard to the results obtained in the experimental schemes for the dental treatment of school children begun during the year in four districts of London. Agreements were entered into with the Poplar Hospital for Accidents, the St. George's Dispensary, Blackfriars, the Deptford Health Centre, and the Wandsworth Medical Treatment Centre.

The Progress of the Local Experiments.

The report stated that with regard to the Deptford and Poplar experiments, while the Council realised that the most appropriate age-group from a purely dental point of view was from six to eight years of age, the period of eight to nine was selected because the ordinary medical inspections included the examination of children of this age, and because it was known that a considerable amount of dental caries existed among those children, for which it would be necessary to provide facilities for treatment. In both cases it was found at an early stage to be necessary to supplement the work of the school medical officers by special dental inspections, and the Council sanctioned the reduction of the time allotted to treatment from ten to nine sessions a week, and authorised the employment of the dentist on the remaining session for the dental inspection of children attending schools in the areas served by the respective centres. The Council, on March 7th, 1911, and on July 4th, 1911, approved two further experiments—viz., (1) at St. George's Dispensary, Blackfriars, and (2) at the Wandsworth Medical Treatment Centre. As special dental inspections had become necessary, the reason for the selection of the older age-group was removed, and the Council, in these two experiments, provided for the treatment of children between six and eight years of age, and for the treatment, in special cases, of children of other ages. Arrangements were made for the dentist in each case to be employed on one session a week to conduct dental inspection in the schools and to select cases for treatment. From the outset it was recognised that difficulty would be experienced in obtaining the consent of the parents, owing to the fact that, in the absence of actual suffering, the need for treatment was not generally appreciated. With a view, therefore, of educating parents in dental hygiene the Council sanctioned lectures by Mr. C. E. Wallis in the vicinity of the centres, and leaflets and cards on the care of the teeth had been circulated. The experimental period at Deptford and at St. George's Dispensary would expire on Dec. 31st, 1911, and it was necessary to decide whether the arrangement should be continued. The consent of the Board of Education in both cases was given on the understanding that, in the event of any application for renewal, the Board would be supplied with reports upon the working of the schemes in sufficient time for consideration before the end of the experimental period.

The Results Obtained.

At the Deptford centre the agreement provided for the treatment of 3960 cases per annum. During the 29 working weeks ended Sept. 30th, 1911, 1594 children were treated, or at the rate of 2420 a year. In addition to 2563 extractions and 2690 fillings some 300 minor operations, such as medical dressings in teeth, scaling, and cleansing had been performed. Of fillings performed 2481 were permanent teeth and 209 temporary; and of extractions 364 were permanent teeth and 2199 temporary. With regard to the discrepancy between the number treated and the number provided for, it should be pointed out that the deficiency was much more serious at the beginning of the scheme than at the present time—e.g., out of a possible 180 appointments during the fortnight ended Jan. 21st, 1911, 49 appointments were kept, while during the fortnight ended Oct. 21st, 1911, 138 children attended the centre. The dentist reported that considerable advantage had resulted from the inspections conducted by him in the schools, inasmuch as they had afforded him an opportunity of arousing the interest of the teachers and children in the work. The experiment at St. George's Dispensary was put into operation in May, 1911. The agreement provided for

the treatment of six cases a session (approximately 1300 a year), but whenever possible endeavour had been made to secure the attendance of eight new cases a session (approximately 1760 a year). During the 16 working weeks ended Sept. 30th, 1911, 457 children attended the centre, or at the rate of 1250 a year. There could be no doubt that dental caries was sufficiently prevalent to justify all the provision for treatment made in the districts served by these two centres, which, notwithstanding the difficulties incidental to the inauguration of new schemes of this nature, had done good work.

In view of the impending reorganisation of the Council's medical work, the committee did not propose to deal with the general question of the dental treatment of children, but the two centres were quite suitable for retention as part of a permanent scheme, and the local committees were prepared to continue the work. All the dentists concerned were in agreement that an anæsthetic was essential in difficult cases of extraction, but no provision had been made for dealing with these cases, and it had been necessary at all the centres to withhold treatment. The Council, however, on August 1st, 1911, sanctioned the employment of an anæsthetist in connexion with the treatment at the Poplar Hospital, and it was proposed that this provision should be extended to all the schemes. On the question of age, it was proposed to provide for the treatment of children from six to eight years of age, selected as the result of special dental inspections, and also, for the present, for the treatment of children of eight to nine years of age selected by the school medical officers, and of any specially urgent cases which might arise. The basis of payment by the Council was £50 a year for one half-day's service a week of the dentist or anæsthetist, and 2s. per case treated.

The cost involved in the two schemes was therefore as follows:—Deptford Centre: Salary of dentist (seven half-days a week), £350; salary of inspecting dentist (one half-day a week), £50; anæsthetist (one half-day a week), £50; capitation grant on 3080 cases, £308; total, £758. St. George's Dispensary: Salary of dentist (five half-days a week), £250; salary of inspecting dentist (one half-day a fortnight), £25; anæsthetist (one half-day a fortnight), £25; capitation grant on 1760 cases, £176; total, £476. The sub-committee recommended that, subject to the approval of the Board of Education, the agreements with the Deptford Health Centre and the St. George's Dispensary, Blackfriars, be renewed as yearly agreements as from January, 1912.

The proposal was approved and the report was forwarded to the Council.

THE TECHNICS OF PLUMBING.—A meeting to inaugurate a course of special lectures on sanitary plumbing was held on Oct. 18th at the London County Council Schools, Ferndale-road, Brixton. The lectures are instituted by the Council for the National Registration of Plumbers under the auspices of the Worshipful Company of Plumbers and the London County Council. Mr. W. D. Caroë, M.A., F.S.A., architect to the Ecclesiastical Commissioners and Past Master of the Plumbers' Company, took the chair, in the absence of the present Master, the Lord Mayor. The meeting was well attended. Mr. Caroë having read a letter from the Lord Mayor regretting his inability to be present, said that he considered the lectures, being given by practical men well versed in all the technicalities of the trade, should inspire confidence in those attending them, and promised to move the court of the Plumbers' Company to offer some award to the successful students. Mr. Fretwell, teacher of sanitary plumbing, then delivered a lecture on Domestic Water-supply. The lecturer described the various forms of boilers and methods of circulating hot water by cylinder, tank, and auxiliary systems. Diagrams were shown, and the relative cost of heating water by coal and coke fires and electricity was gone into. In conclusion, Mr. Caroë congratulated Mr. Fretwell on the lucidity of his lecture, which he (Mr. Caroë) would like to see in print. The usual vote of thanks followed. After the lecture specimens of the standardisation mark applicable to plumbers' work under the regulations of the Board of Trade were shown on pipes of lead, cast and wrought iron, and copper, and the system of marking was explained by the clerk of the Plumbers' Company, Mr. W. R. E. Coles.

Public Health.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH FOR 1910.

City of Liverpool.—Dr. E. Hope's annual volumes form one of the most instructive records of municipal sanitary progress which we possess, and his last report, like its predecessors, is a model in form, arrangement, and illustration. The population of Liverpool is estimated for 1910 at 743,295. The Registrar-General's estimate, based on the 1901 and previous Census returns, approximated closely to the figures obtained by actual enumeration in 1911, and in this respect Liverpool contrasted markedly with Glasgow, Edinburgh, Birmingham, Leeds, and other large cities where the numbers proved to be considerably below anticipations. The usual thinning of the population of the central parts of a great city is, however, seen in Liverpool as elsewhere; during the last ten years the increase has been towards the city boundaries, especially in Walton, West Derby East, and Wavertree. The high birth-rate of Liverpool was maintained in 1910, being 31 per 1000, against 24·8 for England and Wales; the death-rate has declined to 17·9 per 1000, the lowest so far recorded, representing a reduction of 25 per cent. in 15 years. The report gives particulars of the progress made in dealing with insanitary dwellings and houses unfit for human habitation, and has interesting sections on the result of the continuous efforts made in Liverpool to improve the food- and milk-supply. On the latter question Dr. Hope gives further facts which prove that the cowsheds and cows within the city are in a more satisfactory condition than those in the country whence milk is dispatched to Liverpool. In regard to tuberculosis, four samples out of 289 milks of "town" origin proved infective on guinea-pig inoculation, against 15 out of 323 country samples. Dr. Hope draws attention to the enormous reduction in the mortality of scarlet fever which has been effected during the past 30 years, and inquires whether similar reduction may not be practicable in the case of measles and whooping-cough. There is no doubt that much of the spread of the latter disease, particularly in tenements, could be obviated by hospital isolation, but the fact that so huge a proportion of those attacked are infants who would need to be accompanied by their mothers presents a considerable difficulty. Isolation for a limited number of cases, both of measles and whooping-cough, has, however, been provided in the city hospitals. In dealing with tuberculosis Dr. Hope insists on the association of the disease, all through the history of Liverpool, with the construction of its mean streets and alleys and the thousands of insanitary courts and cellar dwellings, which at one time housed as many as 120,000 people. In connexion with the clearance of certain insanitary areas by the corporation, some 2400 appropriately constructed dwellings have been erected which are let exclusively to former tenants of the areas demolished or to tenants displaced by the corporation from equally insanitary dwellings in the vicinity.[1] In contrast to what frequently obtains elsewhere, in these cases at least 80 per cent. of the occupants were previously the occupants of the former insanitary areas, most of them in extreme conditions of poverty and dependent upon precarious labour for a living. At the time these areas were condemned evidence was available to show that for many years there had been a remarkable incidence of phthisis amongst these people, the average annual death-rate approximating to 4 per 1000. The rate amongst these same people in their new surroundings has fallen during the last two years to 1·9 per 1000, the most material difference being the change of dwelling, together with such alterations in their social habits as have ensued from the change. Hospital accommodation for phthisis cases is at present provided out of funds derived from rates by four independent public authorities in Liverpool. Twenty-five years ago the same observation was applicable to all forms of infectious disease, many of which were dealt with under the Poor-law, and Dr. Hope considers that the time may be approaching for a further advance in dealing with tuberculosis by transfer to the public health authority of such responsibilities connected with the disease, apart from the destitution resulting from it, as are at present

[1] THE LANCET June 18th (p. 1718), and July 2nd (p. 60), 1910.

accepted by the Poor-law authorities. The latter authorities in Liverpool have in recent years spent large sums in erecting hospitals, admirable of their kind, for the accommodation of chronic consumptive patients, and now accommodate some 600 patients either in these special hospitals or in the general Poor-law infirmaries. The public health authority has not at present more than 60 beds available for phthisis. It remains to be seen whether the introduction of an entirely new authority, the Health Committee of the National Insurance Bill, will merely augment the existing administrative confusion to which Dr. Hope refers or can usefully adapt the existing machinery. The voluntary system of notification of phthisis has worked more efficiently in Liverpool than in many other towns. Dr. Hope considers that at present practically all cases are notified in which the public health authority can be of service, and that whether all cases of phthisis should be scheduled for notification is really a matter for the medical profession to determine, and largely on the grounds of its own convenience. The report contains an instructive analysis of the reports on cases of phthisis made by Dr. W. L. Hawksley and the sanitary inspectors specially engaged in home visiting. The school children notified during the year to be suffering from pulmonary tuberculosis numbered 344, and attended as many as 110 elementary public schools. There appears to be no evidence of special incidence on any one school, although generally those in the old city area have a relatively greater number of cases. The future history of these cases, if it can be obtained for a sufficient number of years, should be of much value in determining the significance and prognosis of pulmonary tuberculosis reported at school ages. Out of 23,054 births in the city during the year, 17,257 were attended by midwives. One registered midwife attended over 500 cases, while 90 attended less than 50 cases. The average was 70 cases to each midwife in practice. Medical assistance was required by midwives in 1015 cases during the year. The health committee continues to be responsible for a fee of a guinea for every case of emergency attendance by a medical practitioner at the request of a midwife, provided that the fee cannot be obtained from the patient's friends or the board of guardians. Dr. Hope states that the arrangement has given general satisfaction; the total amount paid by the health committee in 1910 was £464. For ophthalmia neonatorum advantage is taken of the provision of a small ward at St. Paul's Hospital, where infants only a few days old can be received with their mothers, and private generosity has enabled a hospital-trained nurse to be appointed to visit the homes of those patients whose parents are unable to provide adequate attention. It is somewhat surprising that so little favour is shown to cremation in Liverpool. A properly equipped crematorium was provided in 1896 at Anfield cemetery, and its administration was taken over by the corporation in 1908. Only 501 cremations have taken place since 1896, the number in 1907 being 37, if anything a little below the average.

City of Cork.—This city, according to Mr. Denis D. Donovan, possesses the unenviable notoriety of having the highest consumption death-rate of any town in Great Britain and Ireland. There were 233 deaths from phthisis in 1910, a rate of 3·06 per 1000. Mr. Donovan renews his advice that cases of the disease should be made compulsorily notifiable, the voluntary system having resulted in producing no more than 38 notifications in 1910. It is obvious that the prevalence of tuberculosis in Cork is closely dependent on the housing conditions of the population. Out of a total of 12,480 houses some 1300 are without backyards, and some 1800 are tenement houses. The latter contain about 23,000 occupants, approximately a third of the population. Many of them are old and decayed, and some hopelessly dilapidated. Mr. Donovan considers that a very large number of these dwellings are so structurally bad and so dirty that any form of patching or mending them would be useless. On the other hand, he regards their demolition as hopeless until new accommodation is available for those displaced. In this matter he strongly advises the corporation to undertake a large construction of cottages on the outskirts of the town—a practice already begun with satisfactory results—in place of any efforts to house the people on the spot in new tenement dwellings. Mr. Donovan draws attention to the recent construction of 21 private slaughter-houses outside the borough boundary, where considerably more animals are now slaughtered than in the city slaughter-houses, where strict inspection takes place. He advocates also provision of a public abattoir with general closure of the private establishments in the locality.

Ross and Cromarty.—Dr. William Bruce's report on this county embodies some interesting observations on public health matters in the island of Lewis made by Dr. D. Murray, the district medical officer of health. The directions in which improvement is required are now fairly well known, but it is only practicable to press for alterations in the habits of the people with any prospect of success if they first realise the reason of the changes they are asked to make. On this view Dr. Murray has made a special point of supplementing his inspections of schools in the island by evening lectures in Gaelic to parents on the Prevention of Consumption and the Care of School Children, and finds his advice taken in good part and with evident gratitude. The tweed-making industry has grown rapidly in recent years, and in some districts nearly every woman is employed. This necessitates almost constant work inside the house, often until the small hours of the morning. There is reason to fear that the health of the women will by-and-by show deterioration owing to the curtailment of work in the open-air. Infections such as those of measles and whooping-cough are frequently introduced from one village to another by special gatherings, particularly local communions, and Dr. Murray pleads for a recognised rule against any person from an "infected district" attending services outside his area without medical sanction. Typhus fever still occasionally shows itself in the island; nine members of a family in a house in Balallan were affected during the year. A curious prevalence of enteric fever, strongly suggesting the operation of a carrier, has occurred in the remote parish of Uig during the last five years.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 77 of the largest English towns, having an estimated population of 16,157,797 persons in the middle of this year, 7449 births and 4128 deaths were registered during the week ending Oct. 28th. The annual rate of mortality in these towns, which had steadily decreased from 21·2 to 14·4 in the nine preceding weeks, further declined to 13·3 per 1000 in the week under notice. During the first four weeks of the current quarter the mean annual death-rate in these towns averaged 14·5 per 1000, and was equal to that recorded in London during the same period. The death-rates in the 77 towns last week ranged from 4·5 in Handsworth (Staffs.) and in King's Norton, 6·8 in Hastings, and 7·5 in Northampton, to 18·7 in Wigan and in Oldham, 18·9 in Hull, and 21·3 in Middlesbrough. The 4128 deaths from all causes in the 77 towns were no fewer than 322 less than the number returned in the previous week, and included 334 which were referred to the principal epidemic diseases, against numbers decreasing from 2900 to 406 in the nine preceding weeks. Of these 334 deaths, 164 resulted from infantile diarrhœa, 48 from measles, 46 from diphtheria, 30 from whooping-cough, 28 from enteric fever, and 18 from scarlet fever, but not one from small-pox. The mean annual death-rate from these epidemic diseases last week was equal to 1·1 per 1000, against 1·7 and 1·3 in the two preceding weeks. The deaths of infants under 2 years of age attributed to diarrhœa, which had steadily decreased from 2714 to 223 in the nine preceding weeks, further declined to 164 last week, and caused the highest annual death-rates of 1·7 in Rhondda, 2·0 in Burnley, 2·7 in St. Helens, and 4·1 in Wigan. The deaths referred to measles, which had increased from 19 to 37 in the four preceding weeks, further rose last week to 48; the highest annual death-rates from this disease were 1·3 in Norwich, 2·4 in Burnley, and 3·3 in Wolverhampton. The fatal cases of diphtheria, which had been 46, 44, and 60 in the three preceding weeks, declined to 46 last week, and included 12 in London and its suburban districts, and 3 each in Birmingham, Manchester, and Leeds. The deaths attributed to whooping-cough, which had declined from 55 to 25 in the three preceding weeks, rose last week to 30; 3 deaths were recorded in London, 3 in Manchester, and 2 each in Stoke-on-Trent, Birmingham, Burnley, Hull, and Rhondda.

The deaths referred to enteric fever, which had risen from 35 to 48 in the four preceding weeks, declined to 28 last week, and included 7 in London, 4 in Hull, 3 in Northampton, 3 in Birmingham, and 2 in Bradford. The fatal cases of scarlet fever numbered 18, against 10 and 13 in the two previous weeks, and of these 4 were registered in London, and 2 each in Walthamstow, Stoke-on-Trent, Birmingham, Leeds, and Rhondda. The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospital, which had steadily increased from 1327 to 2106 in the eight preceding weeks, had further advanced to 2180 on Saturday last; 297 new cases of this disease were admitted to these hospitals during the week, against 293, 355, and 344 in the three preceding weeks. These hospitals also contained on Saturday last 1148 cases of diphtheria, 177 of whooping-cough, 162 of enteric fever, and 84 of measles, but not one of small-pox. The 1132 deaths from all causes in London last week were 107 fewer than the number in the previous week, and included 210 which were referred to diseases of the respiratory system, against numbers steadily rising from 73 to 228 in the eight preceding weeks. The deaths attributed to different forms of violence in the 77 towns, which had been 170 and 150 in the two preceding weeks, rose to 158 last week, and 327 inquest cases were registered. The causes of 30, or 0·7 per cent., of the deaths registered in the 77 towns during the week under notice were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in Leeds, Bristol, West Ham, Bradford, Hull, Newcastle-on-Tyne, Nottingham, Salford, and in 54 other smaller towns. The 30 uncertified causes of death last week included 7 in Birmingham, 6 in Liverpool, 3 in Sheffield, 2 in Stoke-on-Trent, and 2 in Gateshead,

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns, having an estimated population of 1,710,291 persons in the middle of this year, 771 births and 548 deaths were registered during the week ending Oct. 28th. The annual rate of mortality in these towns, which had been 16·4 and 15·7 per 1000 in the two preceding weeks, rose to 16·7 in the week under notice. During the first four weeks of the current quarter the mean annual death-rate in these Scotch towns averaged 15·9 per 1000, and was 1·4 per 1000 above the mean death-rate during the same period in the large English towns. The annual death-rates in the Scotch towns last week ranged from 8·3 and 13·1 in Greenock and in Perth to 18·6 in Glasgow and 19·4 in Leith. The 548 deaths from all causes in the eight towns were 35 in excess of the number in the previous week, and included 52 which were referred to the principal epidemic diseases, against 74 and 47 in the two preceding weeks; of these 52 deaths, 19 resulted from diarrhœa, 12 from measles, 8 from diphtheria, 7 from scarlet fever, 4 from whooping-cough, and 2 from enteric fever, but not one from small-pox. The mean annual death-rate from these epidemic diseases in the eight towns last week was equal to 1·6 per 1000, and was 0·5 per 1000 above the mean death-rate from the same diseases in the 77 large English towns. The deaths attributed to diarrhœal diseases, which had been 33, 41, and 20 in the three preceding weeks, were 19 last week, and included 17 of infants under two years of age; 14 deaths were recorded in Glasgow and 4 in Dundee. The deaths attributed to measles, which had steadily risen from 1 to 9 in the four preceding weeks, further rose last week to 12, and comprised 8 in Aberdeen and 4 in Glasgow. The fatal cases of diphtheria, which had decreased from 13 to 5 in the four preceding weeks, rose to 8 last week, of which 5 were registered in Glasgow. The 7 deaths referred to scarlet fever were equal to the number in the previous week, and included 3 in Glasgow, and 2 Aberdeen. The 4 deaths attributed to whooping-cough were 1 fewer than the average in the three previous weeks, and included 2 in Glasgow. The fatal cases of enteric fever numbered 2, against 1 in each of the three preceding weeks, and were recorded in Glasgow and Perth respectively. The deaths referred to diseases of the respiratory system, which had averaged 79 in the three preceding weeks, rose last week to 111, and were 39 in excess of the number in the corresponding week of last year. Of the 548 deaths from all causes in the eight towns last week, 166, or 30 per cent., were recorded in public institutions, and 25 deaths were attributed to different forms of violence. The causes of 19, or 3·5 per cent., of the deaths in the eight towns last week were not specified or not certified; in the 77 large English towns the proportion of uncertified causes did not exceed 0·7 per cent.

HEALTH OF IRISH TOWNS.

In the 22 town districts of Ireland, having an estimated population of 1,149,495 persons in the middle of this year, 524 births and 377 deaths were registered during the week ending Oct. 28th. The annual rate of mortality in these towns, which had declined from 19·6 to 18·6 in the three preceding weeks, further decreased to 17·1 per 1000 in the week under notice. During the first four weeks of the current quarter the mean annual death-rate in these Irish towns averaged 18·7 per 1000; in the 77 English towns the mean annual death-rate during the same period did not exceed 14·5 per 1000, while in the eight Scotch towns it was equal to 15·9. The annual death-rate last week was equal to 18·0 in Dublin (against 13·1 in London), 16·7 in Belfast, 22·5 in Cork, 8·9 in Londonderry, 12·2 in Limerick, and 9 5 in Waterford; in the 16 smallest of these Irish towns the annual death-rate averaged 17·8 per 1000. The 377 deaths from all causes were 32 less than the number in the preceding week, and included 47 which were referred to the principal epidemic diseases, against numbers decreasing from 134 to 47 in the six preceding weeks; of these 47 deaths, 27 resulted from diarrhœal diseases, 9 from whooping-cough, 6 from measles, 2 from scarlet fever, 1 from enteric fever, 1 from typhus, and 1 from diphtheria, but not one from small-pox. These 47 deaths from the principal epidemic diseases were equal to an annual death-rate of 2·1 per 1000. The mean rate from the same diseases in the 77 English towns did not exceed 1·1 per 1000, while in the eight Scotch towns it was equal to 1·6. The deaths attributed to diarrhœal diseases, which had steadily decreased from 121 to 31 in the six preceding weeks, further declined to 27 last week, and included 25 of infants under two years of age; 13 deaths were recorded in Dublin, 6 in Belfast, 2 in Londonderry, and 2 in Clonmel. The deaths referred to whooping-cough, which had averaged 2 in the four preceding weeks, rose to 9 last week, and comprised 5 in Dublin, 3 in Belfast, and 1 in Lurgan. The fatal cases of measles, which had been 2, 1, and 3 in the three preceding weeks, rose to 6 last week, of which 5 were recorded in Dublin and 1 in Cork. The deaths from enteric fever, typhus, and diphtheria occurred in Dublin, while those from scarlet fever were registered in Dublin and Belfast respectively. The deaths referred to diseases of the respiratory system, which had been 64, 50, and 66 in the three preceding weeks, declined to 57 last week. Of the 377 deaths from all causes in the Irish towns last week, 105, or 28 per cent., were recorded in public institutions, and 12 deaths were attributed to different forms of violence. The causes of 17, or 4·5 per cent., of the deaths registered in the 22 towns last week were not certified either by a registered medical practitioner or by a coroner after inquest; the proportion of uncertified causes in the week under notice did not exceed 0·7 per cent. in the 77 large English towns, and was equal to 3·5 per cent. in the eight Scotch towns.

UNIVERSITY OF LONDON: FACULTY OF MEDICINE.—A meeting of the Faculty of Medicine was held at London University on Oct. 27th, Dr. Sidney H. C. Martin, Dean of the Faculty, being in the chair. The constitution of the boards of studies for 1912 with which the Faculty is concerned was duly arranged. A consideration of a report of the Board of the Faculty on the financial needs of the Faculty was adjourned. Dr. Leonard E. Hill having resigned his position as representative of the Faculty in the Senate of the University, a ballot took place to elect his successor. Two nominations had been received, and the result was as follows: Dr. Herbert Lightfoot Eason, 42 votes, and Mr. Henry Betham Robinson, 18 votes. Dr. Eason was declared to have been elected. The proceedings then terminated.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been notified:—Fleet-Surgeon H. Clift to the *Venerable*, on recommissioning. Surgeons: P. B Egan to the *Halcyon*, additional for the *Skipjack*, and J. D. Keir to the *Venerable*, on recommissioning.

ARMY MEDICAL SERVICE.

Colonel Herbert J. R. Moberly is placed on retired pay (dated Oct. 26th, 1911).

Lieutenant-Colonel Henry O. Trevor, from the Royal Army Medical Corps, to be Colonel, vice H. J. R. Moberly (dated Oct. 26th, 1911).

ROYAL ARMY MEDICAL CORPS.

Major Charles R. Elliott to be Lieutenant-Colonel, vice H. O. Trevor (dated Oct. 26th, 1911).

The undermentioned Captains to be Majors (dated Oct. 25th, 1911): Thomas E Fielding, Charles H. Straton, James M. Cuthbert, and Robert T. Brown.

Captain Herbert O. M. Beadnell is placed temporarily on the Half-pay List on account of ill-health (dated Oct. 17th, 1911).

Captain Alexander D. Fraser, from the Seconded List, is restored to the establishment (dated Oct. 24th, 1911).

Colonel R. H. Forman, principal medical officer of the Bombay Brigade, at present on leave of absence, has been struck off the strength of the Indian establishment, with effect from Nov. 2nd, on reaching the age limit. Lieutenant-Colonel T. B. Winter, senior medical officer in charge of recruiting duties in London, has been selected to officiate as Administrative Medical Officer of the London District, in succession to Colonel A. Peterkin, who has been retired on reaching the age limit. Lieutenant-Colonel H. M. Sloggett has taken up duty at the Military Hospital in Malta. Lieutenant-Colonel J. B. Wilson, in charge of the Surgical Division of the Royal Herbert Hospital, Woolwich, has been detailed by the War Office to proceed to Jamaica during the ensuing trooping season for a tour of foreign service. Lieutenant-Colonel T. McCulloch, in medical charge of the military hospital at Calcutta, has been appointed for duty on board the transport s.s. *Rewa*, which left Bombay for Southampton on Oct. 12th. Major G. S. McLoughlin, D.S.O., on the expiration of his appointment as medical inspector of recruits in the Western Command, has been transferred from Chester to the Southern Command. Major D. J. Collins has taken up duty as Specialist Sanitary Officer to the Dublin District. Major T. B. Beach, company officer of the 33rd Company of the Royal Army Medical Corps stationed at Cairo, has arrived home on leave of absence. Major B. F. Zimmerman has taken up duty at Lancaster as Medical Officer in charge of troops and their families. Major A. L. A. Webb has embarked for a tour of foreign service on the West Coast of Africa. An exchange of positions on the roster for service abroad has been sanctioned by the Director-General between Major L. P. More, serving at Portsmouth, and Major L N. Lloyd, D S.O., adjutant of the School of Instruction, London; the former will accordingly proceed to India for a tour of duty with the Northern Army. Major F. J. C Heffernan has left the London District for duty in India. Major A. H. Waring, from Portland, has taken up duty at the Military Hospital at Gosport as Officer in Medical Charge. Captain J. E. H Gatt has been transferred from Benares to the Station Hospital at Allahabad. Captain L. Bousfield, on the closing of Honiton Camp, has been posted to Devonport. Captain A. H. T. Davis, on completion of a course of instruction at the X ray institute at Dehra Dun, has joined for duty at Secunderabad. Captain J. M. H. Conway, from the Royal Infirmary, Phœnix Park, Dublin, has been selected for appointment as Adjutant to the West Riding Division, Royal Army Medical Corps, School of Instruction, at Leeds. Captain T. J. Potter, on return from special duty under the Colonial Office in Jamaica, has been posted as a Recruiting Medical Officer in London. Captain P. Sampson has been transferred from Sialkot to Upper Topa. Captain P. S Lelean, specialist sanitary officer to the Seventh (Meerut) Division, has been granted one year's extension of his Indian tour of service. The following Captains have been detailed for the nine months' course of instruction for promotion to the rank of Major at the Royal Army Medical College, London, which commenced on Nov. 1st:—G. E. Cathcart, J. A. Turnbull, D. P. Johnstone, E. H. M. Moore, F. J. Garland, R. J. Cahill, S. C. Bowle, A. S. Arthur, P. Dwyer, H. T. Wilson, R. C. Hallows, G. A. D. Harvey, M. Sinclair, A. N. Frazer, H. St. M. Carter, K. A. C. Doig, P. A. Lloyd-Jones, J. St. A. Maughan, L. V. Thurston, A. W. Gater, J. P. Lynch, R. K. White, E. B. Booth, E. G. R. Lithgow, J. S. Pascoe, G. H. Richard, W. McConaghy, A. A. Sutcliffe, H. E Gotelee, E J. Elliot, and J. H. Gurley. Lieutenant F. B. Dalgliesh, who is attached to the Station Hospital at Mhow, has been granted six months' leave of absence home from India.

INDIAN MEDICAL SERVICE.

Colonel H. Hendley, principal medical officer of the Sirhind and Jullundur Brigades, Lahore Division, has been selected by His Excellency the Commander-in-Chief in India for appointment as Deputy Principal Medical Officer of His Majesty's Forces in India in succession to Colonel D. ffrench-Mullen, whose tenure of the appointment has expired. Lieutenant-Colonel H. R. Woolbert, first-class agency surgeon, Bengal Presidency, has been granted six weeks' leave of absence. Major W. Selby, civil surgeon of Lucknow, has been placed on special duty in connexion with the Lucknow Medical College. Major H. J. Walton, civil surgeon at Bulandshahr, has been transferred in the same capacity to Saharanpur. Major C. Milne, on return from leave, has taken up the appointment of Civil Surgeon at Jhansi. The services of Captain N. S. Wells have been placed permanently at the disposal of the Government of the United Provinces of Oudh and Rohilkhand. Captain J. C G. Kunhardt, on special duty under the Sanitary Commissioner with the Government of India, has been granted three months' privilege leave of absence. Captain K. W. Mackenzie has been appointed Specialist in Midwifery and Diseases of Women and Children to the Fifth (Mhow) Division by His Excellency the Commander-in-Chief in India. Captain H. M. H. Melhuish has been transferred to Delhi as District Plague Medical officer. The services of Captain M. F. Rearey have been placed permanently at the disposal of the Honourable the Chief Commissioner of the Central Provinces by the Government of India. Captain A. S. M Peebles has been selected for appointment as superintendent of the Central Asylum at Berhampore, Bengal Presidency, in succession to Major C. Robertson-Milne, deceased. Captain J. D. Sandes, officiating resident physician at the Medical College Hospital, Calcutta, has been granted privilege leave of absence for one month. His Excellency the Governor of Bombay in Council has been pleased to appoint Captain B. B. Paymaster to be a Civil Surgeon of the Second Class and to continue to do duty as Acting Civil Surgeon at Karwar. Captain E. J. C. McDonald has taken up duty in Eastern Bengal for civil employment and has been appointed to the Medical Charge of Sibsagar District, Assam. Captain C. A. Sprawson has been placed on Special Duty in connexion with the Lucknow Medical College. Captain R. Steen, civil surgeon, Bengal Presidency, has rejoined from study leave of absence. Captain A. G Cullie has been appointed a Specialist in Advanced Operative Surgery. The services of Captain J. Buckley have been temporarily placed at the disposal of the Government of the Punjab for Employment on Plague Duty.

TERRITORIAL FORCE.

Royal Army Medical Corps.

3rd South Midland Field Ambulance, Royal Army Medical Corps: The undermentioned officers to be Captains (dated Oct. 1st, 1911): Lieutenant James S. Mather and Lieutenant Thomas A. Green.

1st Northumbrian Field Ambulance, Royal Army Medical Corps: Lieutenant John M. Gover to be Captain (dated Oct. 1st, 1911).

2nd Southern General Hospital, Royal Army Medical Corps: Cadet Frederick Cecil Nichols, from the Birmingham University Contingent, Senior Division, Officers Training Corps, to be Quartermaster, with the honorary rank of Lieutenant (dated Oct. 25th, 1911).

Attached to Units other than Medical Units.—Captain Thomas A. Sellar to be Major (dated August 29th, 1911). Captain David Westwood resigns his commission (dated Oct. 25th, 1911).

THE JAPANESE NAVAL MEDICAL DEPARTMENT IN THE RUSSO-JAPANESE WAR.

The third instalment of the translation of the Japanese Naval Medical report on the late war by Dr. Chemin, staff surgeon in the French Navy, appears in the October number of the *Archives de Médecine et Pharmacie Navales* (O Doin, Paris, 2 francs), and should be read by every naval surgeon.[1] In the battle of the Yellow Sea (August 10th, 1904) the flagship, *Mikasa*, had an ambulance party of 26—12 men on the upper deck (of whom 9 were either killed or wounded), 11 down below, and 3 superintending petty officers. Of the 75 wounded who were treated at the dressing stations 42 walked down by themselves, 29 were carried down "man-handled," and only 4 came on stretchers. The wounded got a first dressing during the action at the dressing stations, which are in places protected indeed, because behind the armour, but very hot and stuffy. So after the battle the wounded were first removed to more convenient places, then taken one by one to the operating room and dressed again that night. After a first visit had been made next morning necropsies of those killed in battle were undertaken. For the battle of Tsushima (May 27th and 28th, 1905) most careful medical preparations were made by Admiral Togo and Surgeon-General Suzuki Shigemichi, who was also on board the *Mikasa*. As we have said before,[2] the principal medical officer of a Japanese fleet lives in the commander-in-chief's mess; that will in time be the case in our navy too. It was ordered that an abundance of dressings were to be prepared, and first-aid dressings to be put on deck in places conspicuously marked; they were also to be carried by stretchermen. Ice was to be available for treating contused wounds of important organs, and fans were to be provided to alleviate the discomfort of the wounded in the dressing stations, which of necessity in parts of the ship at any time hot are particularly uncomfortable in action with the hatches over them shut. It was considered well that men should bathe themselves before an action and put on clean clothes in case they are wounded. Spare operating blouses were to be ready for the surgeons. Stokers, especially in torpedo boats and destroyers, were to wear clothing covering them all over so that as little skin as possible might be exposed to the risk of scalding by escaping steam. It was not enough to give the men wadding to protect their ears from gunfire; medical officers were to go round before the battle and see the plugs were properly adjusted, not too loose nor too tight. Stretchermen were only to be on the upper deck when required; at other times they were to remain down below behind protection—i.e., armour. There was to be plenty of water for the wounded and they were to get as much to drink as they wanted. If in second-class cruisers and small craft ward-rooms were used as dressing stations, curtains and canvas were to be hung all round them to reduce damage by splinters. A nominal list of killed and wounded was to be forwarded immediately after, and men blown to pieces should be so noted in the column for remarks. In this battle the Japanese lost only 3¼ per cent. both killed and wounded, of whom ½ per cent. were killed. This section of Dr. Chemin's translation is full of information of the greatest value to every surgeon of a ship.

QUEEN ALEXANDRA'S NURSING SERVICE.

The regulations for this service for 1911 have just been issued. The limit of age for candidates is 35 and the pay as follows: Nursing sisters on entry, £40 per annum, rising by increments of £2 10s. yearly to £45; nursing sisters after three years, £50, rising by increments of £5 a year to £65; superintending sisters £70, rising by increments of £5 a year to £100; and head sisters £130, rising by increments of £10 to £160. The appointments are pensionable, and the head, superintending, and nursing sisters will be regarded as officers of the hospital, taking a position immediately after the surgeons.

ROYAL ARMY MEDICAL CORPS (TERRITORIAL FORCE): FIRST LONDON DIVISION.

The challenge cup for divisional field work, presented by Major E. B. Waggett, was competed for on Saturday last at Hendon. Three units competed, the 1st City of London Field Ambulance (Lieutenant-Colonel R. R. Sleman), 2nd City of London Field Ambulance (Lieutenant-Colonel J. Norwood Brown), and 3rd City of London Field Ambulance (Lieutenant-Colonel J. Harper). The competition consisted of a tactical scheme drawn up by Colonel B. P. Giles, C.B. (A.M.O. of the Division), on lines suggested by the donor, and included the entire operation of a complete section of a field ambulance under service conditions. The judges were Brevet Lieutenant-Colonel A. P. Blenkinsop and Major G. B. Stannistreet, R.A.M.C. The order was that each section should be formed up ready for work with transport at 4.30 P.M. However, the difficulties of getting men together, owing to their civil employment and the condition of London street traffic, prevented two of the units being on parade to time. At 4.30 to the minute the judges ordered the 1st Field Ambulance to commence. Later on the 2nd and 3rd Field Ambulance arrived, and, no objection being raised, also competed. As soon as it was dark the acetylene lamps and search-lanterns were used, and gave a very realistic representation of what happens in clearing the field of wounded at night. When the "Cease fire" sounded the judges gave their decision that the 1st Field Ambulance were the winners of the cup, the 3rd Field Ambulance being second, and the 2nd Field Ambulance third. The "Officers' call" was then sounded, and Colonel Giles gave the judges' decision and criticism. He complimented Captain A. Elliot, who was in command of the winning section, upon so successfully surmounting the difficulties of getting his transport through London at the appointed time. Captain Elliot had as his subalterns Lieutenant D. C. L. Fitzwilliams and Lieutenant Arthur D. Williams. It is understood that in future the competition will take place during the second week of annual training.

[1] See THE LANCET, Sept. 23rd and Oct. 7th, 1911.
[2] THE LANCET, June 3rd, 1911.

Correspondence.

"Audi alteram partem."

THE NATIONAL INSURANCE BILL.

To the Editor of THE LANCET.

SIR,—As one opposed to any system of payment by fee may I be allowed as briefly as I can to state the grounds on which I base my objection and at the same time give reasons for my preference for the *per capita* system?

I hold one appointment (coastguards) in which payment is made by fee. The amounts received annually have varied over a period of 12 years from nothing to £4. Under the Post Office rate *per capita* I think I should have received more, but at least I should have been paid a fixed sum quarterly and been spared much anguish in making out returns, claims, and what not.

I hold the Post Office appointment under which payment is *per capita*. The pay order comes punctually at the quarter, and there is no fuss about it at all. The only return required is an annual report of the work done.

I hold several society appointments in which of course payment is also *per capita*, and here again it is like a salary should be—paid punctually; one knows the exact amount due, and the day it will be paid. There are no reports to make at any time—the clerical work is practically *nil*. Payment for union work is by salary and the amount of clerical work involved is considerable at times.

I have also a private surgery club for men, women, and children. Premiums I fix myself, and they vary according to age and my estimate of "health value."

An interesting calculation discovers the fact that half my income is derived from these appointments and that the members number *less than one third* of the total of my *clientèle!* The amount derived by "private practice" (including all confinement fees) from two-thirds of the total number of "my patients" is not more now than it was ten years ago, although the number has actually increased by at least 200 in that time. In the harvesting of one-half my income there is involved no making and sending out of bills, with all the worry attaching thereto, and it is only for the union portion of this half that there is any clerical work worth mentioning. For the other half, which comes from my "private practice," day-books, cash-books, and ledgers have to be posted, bills and receipts sent out, and heaven knows what besides. Of the total laboriously entered in my ledger every year I calculate that one-third will never be paid. There is ten times, perhaps 20 times, more clerical work required to get in this "private" half of my income than there is for the other. I have not got actual figures to show the number of visits made for each half of my income, but I

am convinced that there is less for the contract half than for the private, and I am certain there is far less worry. My relations with club patients, club officials, and guardians have always been perfectly agreeable, and everything runs smoothly from year to year. In regard to contract work, one's first and last wish is to get the patient off one's hands by getting him well in as short a time as possible, and there is no dread of being accused of making too many visits—there cannot be a glimmer of a suspicion in anybody's mind that you are going to the case too often. It seems to me this dread would with many of us operate strongly under any system of "payment by fee." There would always be people ready to accuse the doctor of this form of dishonesty—that is, making unnecessary visits (*vide Nineteenth Century*, July, 1911). This fee system is not only contrary to public weal, but I firmly believe is likely to be less remunerative, advantageous, and convenient to doctors than a system under which we shall be paid *per capita*, provided, of course, the premium is not less than the Post Office rate. One must remember that the sickness-rate is declining every year, that hospitals take operation cases off the private practitioner's hands, that in towns isolation hospitals rid him of his infectious cases, and that sanatoriums (if the Act is passed) will relieve him of his tuberculous cases. Various other agencies are at work in the community, which all tend to diminish our private practice—hospitals, patent medicines, medical advice in newspapers, popular medical books, ambulance and nursing classes, improved education, increased facilities of travel, diminishing birth-rate, &c. Every year the income derivable from a given number of the public is a diminishing quantity, and I am convinced that the only hope for the general practitioner is in extending his contract work.

Why the *per capita* system should be denounced as "immoral, dishonest, and demoralising" I fail to see. Should not the boot be on the other leg? (see *Nineteenth Century*). If these adjectives had been applied to the fee system—as they have been—I should have been less surprised. Speaking for myself, I have ofttimes felt "immoral" in charging 2*s*. 6*d*. for a visit to the sick child or wife of an agricultural labourer earning the munificent wage of 15*s*. per week, and I feel demoralised absolutely when I receive it, an event which happens occasionally. Are army and navy surgeons, medical officers of asylums, house surgeons and house physicians, school medical officers, medical officers of health, ships surgeons, doctors at such places as Hong-Kong, Canton, &c., all to be branded as immoral and dishonest because they work on a contract system and not by fee per visit? An asylum medical officer with 600 lunatics under his charge gets £150 a year whether there is much or little sickness amongst them. If he was paid 8*s*. *per capita* his income would be £240, and this is more than it probably would be if he was paid 2*s*. 6*d*. a visit. Some writers seem to think that *per capita* means per "sick person" instead of "per unit of working class."

If the fee system is adopted records of each case will have to be kept, accounts would have to be sent in and carefully scrutinised by officials, various returns would have to be periodically sent up, correspondence would arise over mistakes, or questions, or explanations, and the whole rigmarole would be a hideous nightmare. Under the contract or *per capita* system the necessary writing and the consequent worry would be reduced to a minimum. In my opinion if the capitation fee granted is adequate—and the Post Office rate should be the minimum—medical practitioners will gain largely under the Act. Its first effect will be to greatly diminish the annual total of bad debts we are all piling up in our ledgers. It will at 8*s*. *per capita* provide remuneration equivalent to 2*s*. 6*d*. per visit—without deduction for bad debts. We shall be rid of the ugly feeling which we must have all of us now and again experienced, that we are, by demanding our dues, depriving a poor sick person of what he needs to keep him in health. The effect of a *per capita* system of payment will not be to make us slack, indifferent, and inattentive to our patients, but just the contrary—keen and alert to prevent and active in curing—simply because it will be to our interest to prevent illness. For the first time in history (European) the interests of doctors and public will be at one.

I am, Sir, yours faithfully,

B. HALL, M.B. Lond.

West Mersea, Colchester, Oct. 30th, 1911.

To the Editor of THE LANCET.

SIR,—In a footnote to Dr. H. B. Luard's letter in THE LANCET of Oct. 28th, p. 1229, you say, "It is understood that a majority of the medical profession has given adherence to the principle" (of capitation payment); this understanding is surely a misunderstanding. The facts of the case are these: In spite of the special pleading in favour of the contract system set out in the March report of the British Medical Association, *the Divisions furnished a majority in favour of "payment for work done"*; notwithstanding this, the Representatives, disregarding the instructions of their constituents, adopted a policy of amending the contract system instead of ending it. This policy avowedly adopted on the ground of tactics ("not what we want, but what we are likely to get") has failed in this very particular, for whereas the demand for the abolition of contract, a system condemned by all investigators, including a Royal Commission, would have been found by public and Parliament perfectly reasonable and understandable, the demands of the six-point policy of the Association have gradually alienated the sympathy of the press and Parliament.

Finding that the executive of the British Medical Association was willing to lead them only half way to victory, the profession gave not their "adherence" but their encouragement and support, hoping that the Association would be stimulated to summon up pluck enough to do its duty. The six-point policy fails in duty on two sides. First, if the Association regards contract practice as an evil thing to doctors, patients, and to the practice of medicine (and it as Association has declared it so), then it is its *duty* to demand its abolition when the intervention of the State renders it no longer necessary. Second, since the abolition of contract practice and the universalisation of the ordinary method of payment for work done do no injustice to the contract party, who all hold some private practice and are content with it, whereas the continuance of contract is a great hardship to the anti-contract party, who loathe the whole system, the Association fails in its *duty* of protecting the "rights of minorities" and fails most woefully in this case, since the "minority" is actually a majority.

Urged to be loyal and to avoid appearance of dissension in our ranks, we abolitionists have for some months kept quiet, trusting to bitter experience teaching our leaders that their demands were not only materially but tactically weak, and looking forward to the time (now at hand) when we should have an opportunity of pressing our views again on the profession. This opportunity arises from the failure of the Association's negotiations with the Government which must be followed by a long guerilla warfare; if the profession must fight we ask that a plebiscite should be taken as to what we shall fight for; and we are in no doubt as to the reply of the profession if the question is put clearly to it whether it will fight for semi-tolerable slavery (club practice amended) or freedom and justice (abolition of all contract and *insurance by medical men*).

Let this issue be put clearly, that contract practice is inherently and ineradicably bad, and can only be made tolerable by constant watchfulness in preventing abuses, a watchfulness which is extremely harassing and derogatory to medical men; and that payment for work done is the ordinary principle on which the affairs of society are run; and it will be found that there are few medical men willing that their business should be selected for the experiment of a reversal of this principle. Contract medical work is a combination of two separate businesses: one, medical practice; the other, underwriting or insurance. Are we as professional men desirous of combining with our profession the trade of financial speculation?

I trust, Sir, that you will not hesitate to accede to Dr. Luard's request, and register the names of those who declare themselves to be doctors, and only doctors.

I am, Sir, yours faithfully,

Bristol, Oct. 28th, 1911. HARRY GREY, M.D. Edin.

To the Editor of THE LANCET.

SIR,—In answer to the letter of Mr. Richard Williams in your issue of Oct. 28th, I beg to refer him also to the rules of the National Deposit Friendly Society, from which he will see that there is no analogy between the National Deposit Friendly Society and the scheme of the National Insurance

Bill, which latter caters for an entirely different class of the public.

The National Deposit Friendly Society combines the advantages of a Friendly Society with those of a savings-bank, and it provides sick pay, medical attendance, weekly old-age pay, permanent pensions, and assurances. The contributions of the members are from 1*s.* to 10*s.* per month, which entitle them to from 1*s.* to 10*s.* per day sick pay; in addition to the contributions they must, however, make deposits in the savings-bank department. When they draw sick pay a portion of it is deducted from their deposit account, thus preventing any kind of malingering, and the duration of the sick pay is automatically limited by the amount standing to the credit of a member in his deposit account. There appears to be no wage limit, but the sick pay must not exceed the usual earnings.

The society provides benefits for a much higher class of wage-earner than the ordinary club member, and every member has to pass a stringent medical examination before being allowed to join, extra rates being charged for impaired lives or those working in dangerous or unhealthy trades. The society pays on the following scale of fees for attendances on the members: 2*s.* 6*d.* per visit, including medicine for two days; in dangerous cases requiring more frequent attendance, 1*s.* 6*d.* per visit for intermediate visits. The fee for attendance at a surgery is 1*s* 6*d*, to include two days' medicine. In the case of the better-class members who are in receipt of sick pay between 5*s.* and 10*s.* per day, the medical attendance fees of 2*s.* 6*d.* and 1*s.* 6*d.* have an addition of 6*d.* for each 1*s.* received by a member over 5*s.* per day as sick pay. Mileage over two miles is allowed and very moderate extra fees for surgical cases and operations; these fees include the supply of apparatus, splints, medicines, and attendance for a month, and are, I think, wholly inadequate.

Such fees are perfectly possible to a society with the above rules, but I venture to ask any business man in the profession whether it would be possible to pay them out of an insurance fund dependent on a maximum subscription per assured member of 9*d.* per week, when unlimited continuing sick pay of 5*s* per week is payable in cases of permanent and chronic disability, and members are admitted without medical examination.

Another of your correspondents, Dr. Edwin Smith, thinks that "there must be a capitation fee of 20*s.*, not a penny less." I would point out to your readers that this would mean an annual payment to the medical profession of over £15,000,000, and I should much like to know how it is proposed that such a sum could be raised. I think that the profession should remember that in the past it has given without stint an immense amount of gratuitous medical service; from this heavy burden it will be entirely relieved, for in future there will be no excuse for anyone asking for free medical attendance, since everyone unable to pay will be provided for. In view of this surely it will be possible to arrange a method of remuneration for medical men attending assured persons on a scale adequate but within the means of the Insurance Fund.

I am, Sir, yours faithfully,

South Hampstead, N.W., Oct. 28th, 1911. ALBERT BENTHALL.

To the Editor of THE LANCET.

SIR,—As I had in my early medical days a pretty large experience of club contract practice (one club 900 men, two lodges of Oddfellows, and four small societies) it seems to me impossible to speak too strongly against taking any contract pay for medical attendance. One of the Oddfellows for several consecutive years had more attendance than the whole payment from his lodge covered. The National Provident Society's record conclusively proves that it is possible to pay club doctors according to work done without financial breakdown.

I signed the British Medical Association's resolutions, as many others have done, without feeling in any way pledged to take contract work. Having for 20 years practised amongst a class of patients to whom the Bill applies, and finding that I should need four times the number of patients I now have to make the same income at Mr. Lloyd George's rate of pay, I have decided that I will not work under the Bill. I propose that those of the profession who feel the same, and consider that a decided stand against contract work should be made forthwith, form a "no contract society" without any further delay.

I am, Sir, yours faithfully.

New Kent-road, S.E., Oct. 31st, 1911. VERE G. WEBB.

To the Editor of THE LANCET.

SIR,—Mr. Lloyd George has said that the compulsory part of his scheme must provide that every person employed and whose income is up to £160 per annum must join the insurance scheme. Of course, there are also to be "voluntary" members, these to include all being paid an income by an employer. To illustrate the latter he says that a paid employee, such as a manager of the Bank of England, may become a member, and so obtain medical and other grants for 4*s.* or 6*s.* a year, which will, I trow, be bad for the bank managers, being something very akin to an insurance for death. Now I and others cannot pay for a good reliable assistant to treat these voluntary members. At least they can expect to get only 4*s.* worth of treatment for 4*s.*, just as they would give me only 20*s.* for a sovereign, and no more.

Mr. Lloyd George takes exceptional care not to state how we are to find out the real income from all sources of the "compulsory" member. Here lies the quackishness of his proposal. It may be suggested that as the freedom from paying income tax applies to those whose income from all sources does not exceed £160 per annum less insurance, and less the £10 opposite each child under 16 years, we could obtain a list of all those not taxed for income tax purposes. But such is nowhere provided in his Bill. It is said that about 15,000,000 compulsory contributors must become members. But as the official returns show that only 885,397 persons—excluding firms and companies—paid income tax, how are we to get to know what is the income of the 14,000,000 odd. This is a most serious point, and it is to be hoped that each doctor will call the attention of his M.P. at once to it. I would also point out that in so far not one of the points the British Medical Association has "demanded" has been granted by Mr. Lloyd George. Grave objection must be taken to the manner in which all our rightful requests have been ignored.

If we fail to obtain recognition of our requests then I trust each doctor will at once put himself and his local society into active touch with members of the House of Lords. I shall be glad to hear that some definite, honest, and practical solution has been given as to how the income of "compulsory" members is to be arrived at. If the National Insurance Bill passes in its present form it will mean a loss of at least £1,750,000 every 12 months to doctors.

I am, Sir, yours faithfully,

Liverpool, Oct. 31st, 1911. ROBERT R. RENTOUL.

To the Editor of THE LANCET.

SIR,—Perhaps you might explain the benefits to patients and medical men in the following cases.

On Sundays, when the shops of chemists and druggists are closed, how is medicine to be obtained by the public? In cases of patients coming to the surgery suffering from pneumonia or diphtheria, they will have to go on to the chemist, and perhaps, on busy nights, stand about for half an hour till their prescriptions are made up. In some cases the patient may have a mile or more to walk. Again, in cases of night visits, how is the patient to proceed?

Perhaps you may be able to show the way out of this *impasse;* but I can see only one—viz.: The medical man, unless he is allowed to make up his own medicines and is paid for same, will be forced for common humanity's sake, to give some 30 per cent. of his time and drugs free.

I am, Sir, yours faithfully,

Endymion-road, N., Oct. 31st, 1911. S. CONSTABLE.

*** Our correspondent details one of the difficulties in removing dispensing from medical hands, but we must presume that with the altered circumstances new facilities will arise.—ED. L.

To the Editor of THE LANCET.

SIR,—I read with much astonishment your note at the end of Dr. H. B. Luard's letter in last week's LANCET and should like to learn on what evidence you conclude that the medical profession has accepted the "incalculably wide extension of the contract system proposed under the National Insurance

Bill." I feel convinced that the bulk of the profession, at any rate in the North of England and Scotland, have no intention of accepting such a thing under the Bill, and if you were to peruse the various resolutions which have been passed at the meetings of the local divisions of the British Medical Association you would find that many divisions have passed resolutions that service under the Bill should only be accepted on the basis of payment for work done. When the history of the profession for the past year comes to be reviewed it will seem almost incredible that a learned profession should have shown such a lack of common sense in the attitude it took towards the medical benefits of the Bill.

The British Medical Association sent out a list of questions to be answered in respect to a proposed Insurance Bill before the text of the present Bill was published. Alternative questions were given as to the methods of control and payment under a proposed insurance scheme for medical benefits, and naturally these were answered under the impression that such a scheme would only be applied to the submerged tenth above the pauper line, and many divisions thought that all the questions must be answered. This, in my opinion, is the first mistake the profession (or the Association on behalf of the profession) made, and I feel sure that if the opinion of the profession were now to be taken as to whether they will accept such an extension of contract practice, the replies would be in the negative.

In the six minimum requirements formulated by the Association there is no mention of contract practice or *per capita* payment; the remuneration is to be adequate, and the method of remuneration in accordance with the wishes of the majority of the profession in each locality. Even if these minimum requirements are insisted on the profession can theoretically choose the method of payment; practically I am afraid the "Battle of the Clubs" will have to be fought over again with a Government scheme in place of the Friendly Societies as the enemy. The general opinion of the profession, so far as my opportunities have allowed me to judge, is that up to the present the Association have managed things very badly, and if in face of the reports of the Poor-law Commission, of THE LANCET, and of the *British Medical Journal* condemning contract practice the Association should now countenance contract practice in the present Bill it will receive the heaviest blow it has ever received, and the profession will cease to regard it as a body able to protect professional interests, and the recent increase of membership will be followed by a still more remarkable decrease. I would ask you to take steps to gauge the opinion of the profession as suggested by Dr. Luard, and the results will convince you that the profession are not willing to accept such an extension of contract practice.

I am, Sir, yours faithfully,

Oct. 30th, 1911. F.R.C.S. ENG.

To the Editor of THE LANCET.

SIR,—I have read with interest the numerous letters on the National Insurance Bill and have noticed how many of them advocate payment for work done, say, on the lines of the National Deposit Society, but have never seen one showing why this is impracticable, although many make such statements. I think there is little doubt that the large majority of us, and probably all, would be in favour of payment for work done, if it could be managed, and I cannot see why such a scheme should be at once condemned as being out of the question. I believe I am correct in stating that the actual cost for medical attendance on the National Deposit system works out at a fraction less than 4*s.* per head per annum; and although admitting that the fees are too low, I think every one of us would rather work on some such lines than under the much condemned *per capita* system. Among the points for and against that have arisen on talking the matter over with other men are the following:

Con.: 1. That in a long illness a patient runs through his deposit. This is so, but with the addition of the employer's and State's shares it would be much less likely, and even so he could still receive the 5*s.* a week the Insurance Bill offers. 2. That too many visits might be paid by the doctor, but since these are paid for out of the patient's deposit, there would be the same deterrent effect as at present under the National Deposit system. I think that anyone who has tried both will agree that he sees far fewer trivial cases and pays far fewer unnecessary visits under the National Deposit than under the ordinary club system. 3. The filling up of the necessary forms, but this is really very little trouble and would soon become a routine.

Pro.: 1. That we should all prefer payment for work done. 2. That such a system carries with it free choice of doctor. 3. That we should not have the many trivial and unnecessary calls we now have under the ordinary club system. 4. That it would probably be possible to vary the fees according to the patient's income.

I am, Sir, yours faithfully,

Parkstone, Oct. 31st, 1911. K. M. GIBBINS.

THE STRIKE AND THE DEATH-RATE IN LIVERPOOL.

To the Editor of THE LANCET.

SIR,—The lengthy report of your Special Sanitary Commissioner on the supposed connexion between the recent strike in Liverpool and the severe epidemic of infantile diarrhœa which raised the death-rate in that city during the months of July, August, and September has interested me greatly because I have been defending the position in the lay press of Liverpool that the strike and epidemic were wholly unconnected.

As medical men we have no concern with the causes of the strike, or even with the methods of the strike, but the question whether, as alleged, the strike did accentuate the epidemic has a great scientific interest, especially if the comparative figures in Liverpool and elsewhere show, as I believe they do, that the presence of garbage in the streets had no effect on the epidemic of the disease, thus indicating that it is carried in some other way than by means of garbage.

Your Commissioner starts with the assumption that the strike is responsible for the enhanced death-rate and states that "the death-roll is not yet closed." Such a method of procedure is a mere begging of the question until it has first been proven that the strike actually did produce an effect. I submit that all proof of this is lacking either in your Commissioner's statements or in the statistics given in the report of the medical officer of health for Liverpool. In discussing the question I should like throughout to compare the figures for Liverpool with the figures for Dublin, choosing the latter city because it was free from any general strike at the period in question. The population in the Dublin area is just about half that of Liverpool, so that for comparison the Dublin figures should be doubled.

Your Commissioner makes a great point of the fact that the figures were very low in July and states that there was only a small increase up till August 7th, which he places quite arbitrarily as the date of the strike. By that date, he claims, "the great strike had thrown all the sanitary services out of gear." Now this I emphatically deny, for the scavenging service was not materially disturbed until August 16th till August 19th, the period of the general railway strike, and for a few days thereafter. As to the small figures, in July and early August, giving promise of a mild epidemic in Liverpool, in the first place, I contend, they are not small, and in the second place that they were proportionately much higher than those obtaining in Dublin, where nevertheless there was a heavy epidemic in August and September without the intervention of any strike. Thus, the figures for the four weeks in July for Liverpool were 20, 23, 38, 46, while for Dublin they were 4, 5, 11, 34. For the first four weeks in August Liverpool ran 81, 132, 159, 140, while the Dublin figures were: (week ending) August 5th, 29; August 12th, 41; August 19th, 49; August 26th, 38; Sept. 2nd, 51. For the first four weeks in September the Liverpool figures ran 148, 130, 109, 112; while the Dublin figures for as close dates as available were: (week ending) Sept. 9th, 45; Sept. 16th, 46; Sept. 23rd, 43.

With the single exception that the epidemic throughout, both before, during, and after the strike, is somewhat more severe in Liverpool than in Dublin, there is no difference in the two cities. The curves of incidence are identical in form, and there is no perturbation in the Liverpool one to indicate a strike or other contributory cause. It is also to be remembered that Liverpool is usually one of the most severely stricken centres in any severe year of epidemic diarrhœa. It is entirely without meaning to compare the four or five cold wet summers preceding this last summer

with it, as your Commissioner, copying the medical officer's report, proceeds to do.

Since the increase in the general death-rate was nearly all due to the epidemic of diarrhœa, it would be a waste of space to follow through this, but it appears to me peculiarly absurd for your correspondent to draw attention specially to the small fluctuations in the general death-rate to the end of the fourth week in September and then remark that "these figures clearly indicate that the exceptionally hot weather did aggravate the situation, and that the strike intensified the evil to an alarming and disastrous extent." The modest estimate is then made that for a period of two weeks a third of the deaths from diarrhœa were due to the strike. One cannot help wondering which two weeks these were, and how the "one-third" was arrived at; there is an uncanny precision about it that alarms one. The part of the strike which really interfered with scavenging for a few days occurred in the third week in August. Let it be granted that this aggravated the amount of infection and made more children ill with the disease, then these children have to sicken, pass through the course of the disease, and die before any effect is visible on the weekly death-rate. The very earliest week, therefore, in which the death-rate could show any effect due to the strike would be the fourth week in August, or more probably the first week in September. But in these weeks the epidemic had already commenced to show abatement: how then does your Commissioner arrive at his mathematical one-third of the deaths due to the strike? The only point in favour of an influence of the strike on the epidemic is the slow decline of the disease in September, but this is equally slow in Dublin where there was no complicating strike, and in both cases the most obvious reason is the mild character of the September weather.

To sum up, the epidemic was well on its way and already past its maximum before it could possibly have been influenced by the strike, and there is not one respectable shred of evidence that the strike had any influence upon it. Yet, as a consequence of this report, one finds the workmen accused in the lay press and in a vast mass of municipal election literature of massacring their own children. There are indications about that one of these days the medical profession itself may not be far from something closely resembling a strike, and much as many of us may rightly deprecate certain of the methods of the recent strike, we ought surely to have some meed of sympathy for men striking for a reasonable living wage for themselves and their wives and families. In any case, from the purely professional point of view such scares raised upon entirely inadequate evidence are, in my opinion, much to be deprecated.

I am, Sir, yours faithfully,

Liverpool, Oct. 30th, 1911. BENJAMIN MOORE.

DR. CUTHBERT MORTON'S "PRINCIPLES OF ANATOMY."

To the Editor of THE LANCET.

SIR,—With reference to the review of my work, "Principles of Anatomy: The Abdomen Proper Described and Illustrated by Text and Plates," which appeared in THE LANCET of Oct. 21st, I should like to say that when a scientific work, bearing the visible imprint of years of hard and conscientious labour, is submitted to a scientific journal for review the reviewer is under an obligation to furnish the author and the publisher of the work, as well as the editor and the readers of the journal, with a scientific expert criticism, that is to say, an accurate and clear statement of what the work aims at, how far it attains its aim, and what scientific worth or practical value it possesses or is likely to possess either in its present or in any probable future form. Casual criticism is entirely out of place.

Your reviewer has noted some resemblance in appearance between the "Principles of Anatomy" and Snellen's test-types. I should like to draw attention to a certain resemblance in function also, for just as the keenness of a man's physical vision may be tested by learning from himself how much he is able to see in Snellen's test-types, so the keenness of a man's mental vision may often be gauged by learning from himself how much he has been able to see in a work which he has reviewed. Your reviewer has seen in the "Principles of Anatomy" only "14 drawings"; your readers will find 14 front-and-back plates with at least two drawings for each. He has seen only "outlines"; they will be struck by the details. He has seen that "the outlines all coincide, and when held up to the light in the special frame provided may be superimposed and viewed as transparencies"; they will perceive that outlines which all coincide may be superimposed but cannot be viewed as transparencies with profit. He has seen only "various organs in their relation to each other and to the surface of the body"; they will perceive that, *inter alia*, every organ of the abdomen proper can be studied in its surface anatomy, its parietal, visceral, and peritoneal relations, and its blood- and lymph-vascular and nervous supply. He has seen in some pages of the text an appearance "irresistibly suggestive of Snellen's test-types"; they will perceive that these pages are to be found only in the Table of Contents, where their "strange variety of type" serves a definite and useful purpose. He has seen, quoted, and criticised what "the author says of the purpose of the work"; they will perceive that in their original context on p. 6 of the Principles the words quoted are strictly relevant, referring as they do in the clearest and most unmistakeable manner solely to the presentation of the body by plates. The introductory lines of apology (which, as he truly remarks, have been culled from John Bunyan's Apology for the "Pilgrim's Progress") he has seen to be of sufficient importance to require in the review as much space as either the plates or the text, and he is even "tempted to wish that the author had quoted more fully from the Apology of the 'wonderful tinker,' and added the lines—

> 'If that thou wilt not read, let it alone;
> Some love the meat, some love to pick the bone.'"

Your readers will perceive that the "wonderful tinker" (and the author, too) has long anticipated both the verdict of your reviewer—

> "Well, yet I am not fully satisfied,
> That this your work will stand, when soundly tried,"—

and the author's reply—

> "Be not too forward, therefore, to conclude,
> That I want solidness,—that I am rude;
> Nay, since your brethren pleased with it be,
> Forbear to judge till you do *further see*.
> If that thou *wilt not* read, LET IT ALONE;
> Some love the meat, some love to pick the bone."

I am, Sir, yours faithfully,

WM. CUTHBERT MORTON, M.A. (Classical First), M.D. Edin.,

Honorary Demonstrator of Anatomy in the University of Leeds.

Leeds, Oct. 28th, 1911.

THE NOMENCLATURE OF SPINAL DEFORMITIES.

To the Editor of THE LANCET.

SIR,—Mr. Paul B. Roth and myself disagree upon one very distinct point. He, following Lovett's deductions and the suggestion of W. Adams, believes that the spine is incapable of any simple lateral movement whatever, and that even in the normal subject rotation is coincident with the very beginning of side-bending. To him, therefore, the terms "lateral curvature" and "skoliosis" are synonymous. I hold a very firm opinion that lateral movement in the dorsal region is free until all play in the costo-vertebral articulations has been taken up and that rotation commences only when the tubercles of the ribs become firmly applied to the tips of the transverse processes. To me, therefore, the terms "lateral curvature" and "skoliosis" are *not* synonymous, for the first stage of the former may be quite free from any rotation whatever. The extent of this free stage varies with the type of patient, being very brief in the "rigid" type and much greater in the "loose-jointed" type. Its existence in the latter type has been noted again and again by old writers, who verified their observations by the use of some such instrument as Barwell's skoliosis gauge, and who adopted the term "lateral deviation" to fit this pre-skoliotic phase of lateral curvature.

However, Mr. Roth and myself can meet on common ground by putting aside the terms "skoliosis" and "lateral deviation" altogether, and by using the term "lateral curvature" to cover all phases of all cases. The classification he supports then works out as follows:—1. Postural lateral curvature. 2. Osseous lateral curvature in four stages—trace, moderate, severe, and extreme. The diagnosis between

the "postural" and "osseous" cases presents no difficulty, and is too well known to call for any description, but the subdivisions of "trace," "moderate," "severe," and "extreme" leave too much to individual judgment. They are excellent terms to use to the patient's friends, but are too vague to find acceptance if any more precise classification is available. I maintain that we have this in the method of Professor Rudolf Klapp and Dr. Frünkel of dividing all cases into three grades, each easily recognisable, and each resting upon a definite anatomical basis.

There is no need to repeat the analysis of these three grades given in my letter published in your issue of Oct. 14th, but Mr. Roth misapplies to them my description of the three distinct stages in the underlying anatomical changes in the thoracic skeleton. My correct statement regarding the three clinical grades of cases was as follows: "These grades pass imperceptibly one into the other. ..... But, with experience in examination, there is little difficulty in relegating any one case to its proper grade: the distinction is about as definite as that between degrees of burn." The truth of this comparison is a strong argument in favour of this method of classification.

Mr. Roth has some difficulty in understanding the second grade of case in which the bones have not yet undergone any fixed alteration in shape and in which the deformity, rendered possible by the elasticity of the ribs and their cartilages, is maintained in great measure by muscular and ligamentous shortening holding the contorted thorax in malposition. There is no mystery about lateral curvature of the spine and the soft parts behave as they do in other deformities—viz., the muscles and ligaments will become shortened or lengthened according to diminished or increased strain. Thus they will be shortened on the concavities of the curves and lengthened on the convexities. It was in recognition of this phase and of the importance of restoring the mobility of the thoracic framework that the "creeping" exercises were devised, and therein lies the explanation of the excellent results derived from them.

I am, Sir, yours faithfully,

Cavendish-place, W., Oct. 28th, 1911. J. S. KELLETT SMITH.

THE ETIOLOGY OF SCARLET FEVER.

To the Editor of THE LANCET.

SIR,—In THE LANCET of Oct. 28th you publish a communication from Dr. R. W. C. Pierce, medical officer of health for Guildford, on the subject of the Etiology of Scarlet Fever. In the communication he mentions that I called the attention of Dr. J. C. Thresh, medical officer of health for this district, to the fact that I had a sequence of four sporadic cases of scarlet fever, in each of which there was a septic wound or a septic condition of some sort. The cases were as follows: 1. A boy, aged 9, sleeping and living amongst five other young children, developed a typical scarlet fever rash, throat and tongue. It was not possible to move him until two days after I had diagnosed his condition, so that he had to remain amongst the other children. None of them caught it. He had an abscess and a septic condition of the sole of the foot. 2. A young lady had had her ears pierced and the wounds became infected. About 14 days afterwards she developed a rash very like scarlet fever and undoubtedly connected with the septic condition of the lobes. This certainly was not a *typical* case of scarlet fever. 3. A child of 8 showed a typical scarlet fever rash. She lived in an isolated cottage and had not been near other children or people for several weeks. She had a septic sore from an abrasion on the front of the tibia. 4. A young woman had a lot of teeth removed under gas for pyorrhœa alveolaris. She developed scarlet fever a few days afterwards.

These four cases, occurring one after the other, long distances apart, arising from no previous cases as far as I knew, and giving rise to no fresh cases in their own homes as they were either isolated at home or sent to the fever hospital before the peeling stage, made me think whether there was a condition common to them all to account for the onset. The common condition to all I found was a septic one on some part of the body.

Until such a condition is found to be present in a large percentage of sporadic cases in sparsely populated districts the observation is not worth much. It would be interesting to hear other medical officers of health on the subject.

I am, Sir, yours faithfully,

Stock, Ingatestone, Oct. 30th, 1911. HERBERT CARDIN.

OLD AND NEW VIEWS ON THE TREATMENT OF CONSUMPTION.

To the Editor of THE LANCET.

SIR,—Dr. C. Theodore Williams in his excellent Harveian oration on the new views on the treatment of consumption, published in your last issue but one, mentions that 54 different theories have prevailed in bygone ages—that is, from the time of Hippocrates to the time of Dr. Hughes Bennett. And these theories are as diverse as they are numerous, and testify to the lively imagination of their authors, and, as a rule, mistake predisposing causes for the *causa vera*, which, "though long suspected, was never actually discovered till Robert Koch appeared on the scene." May I be permitted to mention an addition to the list, and which, I believe, surpasses all others in value, and is a piece of work of equal magnitude with Koch's own, which it preceded by almost 14 years. I mean, "Études sur la Tuberculose: Preuves rationelles et expérimentales de sa spécificité et de son inoculabilité. Par J. A. Villemin, professeur agrégé à l'École Impériale du Val-de-Grâce, 1868; à Paris, chez J. B. Baillière et Fils, éditeurs." The 17me Étude is a most remarkable production; any one having read the work will believe that Villemin listened to the exhortation of "l'immortel Harvey," as we say on this side of the Channel, "to search and study out the secrets of Nature by way of experiment," and that he did it successfully.

I am, Sir, yours faithfully,

Paris, Oct. 30th, 1911. EUGENE DUPUY.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Physical Defectives.

A SPECIAL subcommittee of the Birmingham Education Committee has issued an exhaustive report concerning all cripples in the city, both adults and children. It has taken the committee two years to tabulate and collect the facts. The object was to find out why people became cripples, what could be done to prevent it, how cripples earn a living, and in what trade they are most successful. The answers to these questions are given at some length. There are 1001 cripples (546 males and 455 females) over 16 years of age. Of these 334 (212 males and 122 females) are being maintained by the three local boards of guardians, 180 being in infirmaries and 154 in workhouses. In the Birmingham workhouse and infirmary out of a total of 2636 inmates 272, or 10·3 per cent., are cripples. Of the 1001 cripples in the city about one-fifth, or 214, were able to work under ordinary conditions, and 145 could do some useful and remunerative work if workshops could be provided in the centre of the city. They were not so handicapped that they could not go to and from their work, but they could not compete with ordinary workmen. Employers were loth to engage them. The third class, 111, were unable to go to and from a central workshop. The Cripples' Union was doing a great work, but had not sufficient funds to cover the ground. The last class, comprising 531 cases, could do no remunerative work, and 334 of these were maintained by the guardians. There were 728 cripples under 16 years of age, some of whom will recover, but the committee did not think this number would be large. Mrs. Hume Pinsent, in presenting the report to the Education Committee, said she believed it was the first report of the kind ever made in England. She appealed to the medical profession to read the report and see if they could give satisfactory answers and information on the questions asked. Dr. H. W. Pooler pointed out that the great majority of cases of tuberculosis of the bones and joints were due to infection from food, chiefly milk, which children took in their earlier years.

Greater Birmingham and Special Schools.

None of the outside districts about to be taken into the city have made special provision for defective children with the exception of Aston, which has a small school for the deaf. The other districts send most of their deaf children to institutions, and in all the districts blind children are sent to institutions. The percentage of defective children in the school population will probably not differ materially in the new districts from the percentage known to exist in the old

Birmingham area. In the present city, with a school population of 96,260, there are 1093 mentally defective, of whom 832 are in day-schools, 51 in residential schools, and 210 for whom further accommodation is required. Further accommodation is also required for 63 cripples, 33 epileptics, and 20 partially blind children. In the outside districts it is estimated that there were 826 defectives for whom accommodation must be gradually found.

Oct. 30th.

NEWCASTLE-ON-TYNE.

(FROM OUR OWN CORRESPONDENT.)

Stannington Sanatorium: Opening of a New Wing by Earl Grey.

ON Oct. 29th there was formally opened a new wing of the Children's Sanatorium at Stannington. More than ordinary interest was attached to the ceremony of opening. In the first place, the expenditure for the erection and equipment of the extension was entirely defrayed by the Lord Mayor of Newcastle-on-Tyne, Sir William Stephenson, and the new wing has been named the Lady Stephenson Wing in consequence. The institution itself is an off-shoot of the work of the Poor Children's Holiday Association, which also manages a convalescent home on the same land for children recovering from debilitating diseases; here one must also mention the presence of a neighbouring farm, also under the auspices of the Poor Children's Holiday Association, worked by youths who have been rescued from a street life. Rather more than a year ago Sir William Stephenson wrote: "It has constantly been in my mind that the building ought to be completed by the erection of an additional wing, and thus provide accommodation for 50 more patients"; and following on this he made his gifts as mentioned above. In the second place it is interesting to note that these additional beds will be devoted to patients suffering from local tuberculosis, of joints, bones, and glands, for whose relief up to the present there has been no provision in the sanatorium. And, thirdly, interest attaches itself to the fact that the opening by Earl Grey was his first public service since his return from Canada after his seven years' governor-generalship. At the ceremony Earl Grey was supported by Sir William Stephenson, Miss Stephenson (the Lady Mayoress), Lord Armstrong, Sir Walter Plummer, Lady Ridley, Sir Riley Lord, the Right Hon. Thomas Burt, M.P., and Mrs. Burt, Dr. T. M. Allison, Mr. J. H. Watson (honorary secretary), and many others. Earl Grey received a gold key from the Lady Mayoress and opened the door of the new wing, after which a dedication meeting was held in the large dining-hall. In the course of his remarks the noble chairman said that he had had no hesitation in replying from Ottawa, where he had received the invitation for the ceremony, and accepting the invitation; the character of the association made him regard its operations as doing some of the best work for the public in the north of England. They were often told by scientists that that country which had a large amount of consumption among its population was an uncivilised country, and that if only the lives of the people could be regulated on scientific lines they should make consumption as obsolete a disease as leprosy was to-day. It was possible for them to banish it from the land if they only tried. The Lord Mayor, in thanking Earl Grey for his kindness and presence, asked to be allowed to present to his lordship a small gift of silver plate. This took the form of a tray with a suitable inscription thereon, and also an engraving of the new wing. Earl Grey suitably replied. Votes of thanks to Earl Grey and to the Lord Mayor concluded the proceedings.

Care of the Teeth: Step by the Northumberland Education Committee.

The Northumberland education committee meeting at the Moot Hall, Newcastle-on-Tyne, last week considered a report dealing with the results of a circular letter, which had been addressed to the managers of the elementary schools, inviting attention to the remarks of the school medical officer in his report of last year relative to the injury likely to arise from carious teeth. The managers were asked to state their views after consulting the head teachers on the likelihood of scholars purchasing at the school toothbrushes if supplied by the committee at cost price, and, further, as to the practicability of the scholars using the brushes at the schools. Replies had been received from 39 schools, and whilst in three cases the managers stated that in their opinion no action was necessary, and in one case it was stated that all the children used toothbrushes in their homes, the majority were in favour of inviting the children to purchase brushes, but, as a rule, considered it was impracticable for them to be used at the school premises. It was agreed by the committee (1) that a supply of toothbrushes should be purchased out of the voluntary fund which had been raised for the provision of spectacles and sold at cost price to the scholars asking for them; (2) that it be left to the managers and teachers to arrange for the brushes to be used by the children; and (3) that a circular drawing attention to the importance of cleaning the teeth be prepared by the school medical officer and issued with the brushes.

Oct. 31st.

WALES.

(FROM OUR OWN CORRESPONDENT.)

Pauperism in Lampeter.

THE Lampeter union has a decreasing population of about 9000 persons, and at a recent meeting of the board of guardians Mr. Hugh R. Williams, one of the Poor-law Inspectors of the Local Government Board, drew attention to the much higher cost of pauperism in the union than in the adjoining districts. The cost per head of paupers in Lampeter had increased from 5*s.* to 5*s.* 6*d.*, whereas in the Tregaron union the cost per head was 4*s.* 5*d.* He suggested that the guardians of the unions in Cardiganshire should consider the practicability of carrying out a more extended classification of those paupers who were in institutions by utilising one workhouse for adults, another for children, and another for the weak-minded. In the early days of Poor-law administration there was a workhouse in each parish; these soon gave place to a combination or union of parishes with a joint workhouse, and now it would appear to be desirable to have a combination of unions.

Welsh Tuberculosis Campaign.

There has now been promised to the funds of the Welsh National Memorial nearly £200,000. This is to be utilised in every reasonable manner that can be devised for preventing tuberculosis, and an influential deputation is waiting upon the Chancellor of the Exchequer asking that Wales and Monmouthshire should be constituted a unit for providing sanatoriums and administering sanatorium benefits under the National Insurance Scheme. So far the efforts of the promoters have been concentrated on methods of education by means of popular lectures, a travelling exhibition, and the spread of popular literature. A further step has now been taken in the direction of treatment. A small sanatorium has been presented to the Memorial Fund by Miss A. M. Davies, who erected it a few years ago and has since maintained it in the county of Anglesey. In Newtown, in the county of Montgomery, there is in course of erection the first tuberculosis dispensary to be established in North Wales. The entire cost is being borne by Mr. David Davies, M.P., who was the originator of, and a most munificent contributor to, the Memorial Fund. He intends to place it at the disposal of the fund when completed, and it will presumably be administered in conjunction with the Montgomeryshire Infirmary at Newtown, the new buildings for which have only recently been opened. The dispensary, which has been carried on in a basement room in the Cardiff city hall for more than a year, under the assistant medical officer of health, Dr. E. Fairfield Thomas, as medical officer, has established for itself a definite place in the public health equipment of the town. There are over 1000 names of patients on the books of the dispensary, and the results of the enterprise are said to be very encouraging.

Housing Schemes.

The Merthyr corporation was one of the earliest to embark on a municipal housing scheme, and it has now decided to purchase an estate 92 acres in extent at a cost of £12,000. It is intended to erect on it about 300 workmen's dwellings, many of which will be required to replace houses which ought no longer to be occupied, but of which the occupants cannot find better dwellings. At Bedwellty, an urban district

of Monmouthshire, the population of which has increased from 10,000 in 1901 to over 22,000 in 1911, there has for some years been a serious dearth of houses, but there seems at last to be some prospect of an amelioration of the existing unsatisfactory conditions. The district council has decided to build 60 houses, and nearly 500 more are to be erected by the Welsh Garden Cities Syndicate on a site of 40 acres. The scheme of the syndicate enables the tenant of a house to purchase it on payment of an initial sum equal to 20 per cent. of the cost of construction, the remaining 80 per cent. being paid in weekly sums amounting to less than the rental that would ordinarily be charged for such a house.

Diphtheria in Cardiff.

In a recent report to the Cardiff school management committee Dr. E. Walford, the medical officer of health and school medical officer, stated that during the first nine months of the present year there had been 334 cases of diphtheria in the city and 24 deaths. In the corresponding period of 1910 there were 236 cases and 12 deaths. As in former years, the chief incidence of the disease has fallen on children at school ages, and it is probable that the assembling of children in the public elementary schools at ages when they are particularly susceptible to infection has been a factor in spreading the disease. Facilities are afforded at the public health laboratory for the examination of specimens from the throats of suspected children and from convalescents, but Dr. Walford expresses regret that greater use is not made of these facilities by the medical practitioners of the town.

Oct. 30th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

University of Edinburgh: Meeting of the General Council.

THE statutory meeting of this body was held on Oct. 27th in the University. Sir William Turner, K.C.B., Vice-Chancellor, presided. The first business was to appoint two assessors to the University Court: Dr. R. McKenzie Johnston, whose term of office had expired, was reappointed; and Mr. George A. Berry, President of the Royal College of Surgeons, was appointed in room of the late Dr. Joseph Bell. Mr. J. B. Clark, convener of the business committee, submitted a minute regarding Dr. Bell's death, in which, in addition to the qualities for which he was so widely known, his devotion to duty, and particularly to his duty as one of the General Council's representatives on the Court of the University, his conspicuous business ability, sound judgment, and natural quickness were eulogised. It was intimated that the University had recently decided to grant a Diploma in Psychiatry, which will be open to any registered medical practitioner who completes the necessary course of study. The diploma is intended for those who propose to devote themselves to this branch of medicine. The course of study will extend over one academic year. Candidates who have held responsible asylum posts for not less than two years may be exempted from one or more subjects of the curriculum. The opening of this diploma to all medical practitioners is one of the first-fruits of the recent medical ordinance giving the University greater freedom of action than it had formerly. The only other matter of medical interest brought before the Council had reference to the inclusive fee proposals. The convener of the business committee intimated that the University Court had agreed to its representation that if an inclusive fee were established the cost of study to the student should not be increased; he at the same time proposed that the Council should take no further action in the matter at present, as it was undesirable to hamper the dealings of the University with the Treasury. It was decided, however, to send to the University Court the findings of the conference of representatives of the general councils of Scottish Universities which had met in July. The findings were briefly as follows: The conference did not approve of the principle of inclusive fees; that if it was forced students should have the option of paying individual class fees as at present. Apart from Arts, the conference had not sufficient data to enable it to suggest the amount of the inclusive fee; that whatever system be adopted in the Faculties of Medicine and Science care should be taken to safeguard the interests of the extramural schools; that in the case of a student presenting a qualifying certificate from an extramural class his inclusive fee should be reduced by that amount. It was then proposed and agreed that the meeting be postponed, as there were certain important matters to be shortly sent down from the University Court for the consideration of the Council. The date of meeting was left in the hands of the business committee.

The British Medical Association and the Insurance Bill.

On Oct. 28th a meeting was held in Edinburgh to consider the prospects of the profession with regard to the National Insurance Bill. The meeting was called by authority of the Scottish Committee of the British Medical Association. The meeting was held in the hall of the Students' Union. Sir William Turner, K.C.B., occupied the chair, and there was a large and representative gathering of members. The chairman, in his opening remarks, spoke of the very critical position in which the profession was placed. He warned them to be careful of the acceptance of principles that were not backed up by clear alterations in the text of the Bill. He hoped the profession would hold together and determine that their profession was not to be lowered in its position and robbed of its rights. The meeting was then addressed by Mr. J. Smith Whitaker, who dealt at length and in detail with the steps the British Medical Association had taken with regard to the Bill. He said that the Government had agreed to the insertion of a clause providing for the establishment of local medical committees who would have power in the determination of the wage-limit in different districts and in the determination of the question of remuneration. As soon as the Bill had passed through the Committee stage the whole question would again be referred to the divisions for their consideration and decision. He very strongly impressed upon his audience that their fate lay in their own hands; if they remained firm and united they could get any terms they liked. All that was required was that they should unitedly decline to take contracts under the Bill whatever its provisions might be. A motion was then submitted by Dr. Gordon of Aberdeen and seconded by Dr. Hamilton of Hawick affirming absolute adherence to the six points of the policy propounded and placed before the profession by the British Medical Association, and appealing to all practitioners in Scotland to support liberally by their subscriptions the insurance defence funds. The motion was carried with acclamation, and the chairman declined to have any discussion. It ought, however, to be stated in this connexion that Mr. Whitaker had spoken for one and three-quarter hours, and that country members and men from a distance had to leave. A motion by Dr. D. J. Mackintosh of Glasgow, seconded by Dr. G. R. Livingston of Dumfries, thanking the Council of the British Medical Association for its labours and declaring confidence therein was also passed.

The Edinburgh and Leith Practitioners' Association.

The annual dinner of this society was held on Oct. 25th, Dr. Alexander James being in the chair. Colonel Sir Joseph Fayrer, the superintendent of the Edinburgh Royal Infirmary, was the guest of the evening. The meeting was well attended.

The Rectorial Election at the University of Edinburgh.

The horseplay which characterises the contest for the Lord Rectorship was not lacking this year, but it seems to have been more circumscribed than usual, owing apparently to the police arrangements.

The Association of School Medical Officers for Scotland.

A general meeting of this association was held in the Royal Infirmary, Edinburgh, on Oct. 21st, Dr. E. T. Roberts, the President, being in the chair. After the election of a number of new members, a demonstration of diseases of the skin was given by Dr. Norman Walker. Many cases of special interest to the school medical inspector were shown, and the demonstration concluded with a practical *résumé* of the present treatment and prevention of ringworm, and a consideration of the question of the admission of cases of ringworm to schools. A hearty vote of thanks was awarded to Dr. Walker. The next general meeting of the association will be held in Glasgow on Nov. 18th.

Complimentary Dinner to Professor MacEwan.

On the occasion of his retirement from the acting staff of

Dundee Royal Infirmary Professor David MacEwan was entertained at dinner by his past house surgeons and his friends of the Forfarshire Medical Association. Dr. Charles Templeman, medical officer of health of Dundee, presided over a company of 60, and in the course of the evening, in felicitous terms, proposed the chief toast. On behalf of the former house surgeons he then conveyed to Professor MacEwan a series of gifts for himself and Mrs. MacEwan in token of the affectionate regard of his late assistants. The professor acknowledged the toast and the gifts in well chosen words.

Oct. 30th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Lord Iveagh's Gift to the Dublin Hospitals.

THE members of the managing committees and medical staffs of the Dublin hospitals met on Oct. 24th in the Royal College of Surgeons to express their gratitude to Viscount Iveagh, K.P., for his recent gift to His Majesty King George V. of £50,000 for distribution to the Dublin hospitals. The large hall of the College was well filled, and Viscount Monck presided. In a resolution adopted with a view to showing, in a special manner, their appreciation of his lordship's generosity, the governing bodies and medical staffs recalled a similar generous gift for Dublin hospitals made by Lord Iveagh to King Edward VII. They assured his lordship that it will be their endeavour so to employ the funds which have been placed by him, through His Majesty, in their hands, that the poor, who seek aid at these hospitals, may derive the greatest possible benefit from the charity.

Dublin Hospitals Tuberculosis Committee.

At a meeting of the Dublin Hospitals Tuberculosis Committee, held in the P. F. Collier Memorial Dispensary on Oct. 27th, a report of the work performed by the committee's three nurses during the past eight months was read. In all 308 cases were attended, 3880 visits being paid. Twenty-eight patients improved so as to be able to return to work; 136 were admitted to various institutions; 52 deaths occurred. Much work was done in the way of disinfection of rooms, distributing sputum flasks, supplying food and paying rent while the head of the family was ill, sending children of tuberculous parents into the country or boarding them out, and sending children to schools or institutions after the parents' death. In 46 families visited more than one person was affected. The average number in each family was six. The average weekly income was 13*s.* 8*d.*, but only 5*s.* when the breadwinner was ill. The report was considered most satisfactory. The Collier Tuberculosis Dispensary will be opened on Nov. 1st, and there will be evening attendances twice a week, the attendance on other days being in the morning.

Cerebro-Spinal Fever in County Roscommon.

A serious outbreak of cerebro-spinal fever has occurred in the Strokestown district of the County Roscommon. Some 30 cases have occurred, and six patients have died. Only children are affected. There was at first some difference of opinion as to the nature of the disease among the medical men in attendance, but Sir J. Acheson MacCullagh, Local Government Board inspector, reports that the disease is undoubtedly cerebro-spinal fever.

Royal Victoria Hospital, Belfast.

At a meeting of the Saturday Street Collecting Committee on Oct. 30th it was announced that the total amount of the street collections this year for the hospital, after deducting working expenses, was £1029, a record amount. From Belfast £820 was received (as against £750 in 1910), and from the country districts £277 (as against £221 in 1910). It is hoped to raise £2000 next year.

The Belfast Natural History and Philosophical Society.

Professor J. A. Lindsay has been elected president of the Natural History and Philosophical Society, in succession to Sir John Byers, who has been president of the society for the past three sessions, and who, at the annual meeting on Oct. 25th, was specially thanked for the work he had done in strengthening the prestige and position of the society. It was during his term of office that the arrangement was completed with the corporation of the city of Belfast by which a new city museum and art gallery is to be erected in that city.

The Water Famine in Ireland.

In Belfast it has been found necessary to restrict the water-supply to seven hours daily. Instructions have been issued to the inhabitants to use as little water as possible for personal ablutions and to use none at all for pavements and shop windows. It is urgently necessary that the Stonyford scheme, referred to in THE LANCET of Oct. 28th, should be carried out, and it is hoped that no opposition on the part of the authorities or the public, and no unreasonable self-seeking on the part of the owners of the required land, will obstruct this course. In Derry, on Oct. 28th, only 5 feet of water remained above the draw-off point in the last available reservoir, and unless a complete change in the weather occurs, with torrents of rain, the entire city will have to depend upon a carted supply or upon wells. No water for manufacturing purposes has been allowed to be used for a week, and but for the discovery of wells all the large shirt factories for which Derry is famous would have been shut down. If the water totally fails from the reservoirs, corporation carts will carry water round at a cost of £100 per diem. So far there has been no disease attributable to the scarcity of water or to inferior water being used. During the past ten days "water diviners" have been reaping a harvest by locating springs for manufactories. At a special meeting of the Rathfriland town commissioners, held on Oct. 26th, a resolution was passed approving of a scheme by which that town, situated at a high level in South Down, is to be supplied with water from a catchment area in Altaggart Mountain (a short distance from Hilltown, six miles from Rathfriland) where there is a stream. The catchment area, shut in by hills and covering 500 acres, is 200 feet above the level of the highest street in Rathfriland. A special report indicated that the water was good and that it was free from risk of pollution, and it comes from a very wet district with an average rainfall of 36 inches. By making an impounding dam or reservoir across the stream constant supply could be ensured.

Scarlet Fever in Belfast.

A serious epidemic of scarlet fever is prevailing in Belfast, the cases coming largely from working-class districts.

Prevalence of Infectious Diseases in Newry District.

At the monthly meeting of the Newry rural council, on Oct. 28th, attention was drawn to the large number of cases of infectious disease notified in the district since the last meeting. Six cases of scarlet fever had been reported at Carrickravady, two of diphtheria in Rathfriland, of which one had died; two cases of scarlet fever in Warrenpoint, one in Edentromley, one at Tamnaharry, and one at Bavan. In Newry there had been an outbreak of typhoid fever, with 15 cases altogether.

Cavan Auxiliary Asylum.

At a meeting of Clones rural council, held on Oct. 26th, a resolution was unanimously passed protesting against the proposal to establish an auxiliary asylum in County Cavan, on the ground that it would impose an increased burden on the ratepayers of both counties. The council called upon the ratepayers of Monaghan and Cavan to do all in their power to insist that the additional accommodation required should be provided at the present Monaghan Asylum, and they also authorised their solicitor to employ counsel to appear at the inquiry to oppose the establishment of an auxiliary asylum in Cavan. At a meeting of the Monaghan urban council, held on Oct. 27th, a very strong resolution was passed unanimously also protesting against the establishment of an auxiliary asylum in Cavan.

Oct. 31st.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Is Tuberculosis Heritable?

THE direct transmission of the bacillus from mother to child during pregnancy has been denied by many scientists, inasmuch as ordinarily bacilli are not found in the blood of the fœtus from a tuberculous mother, either among man or among animals. M. Landouzy, dean of the Faculty of Medicine of Paris, some 30 years ago affirmed this transmission from

mother to child. He has patiently continued his researches since that time, and on Oct. 17th made to the Academy of Medicine a communication of the utmost importance which seems to establish this fact beyond dispute. After rendering female guinea-pigs, rabbits, and dogs tuberculous, both before and during gestation, he found neither bacilli nor characteristic lesions in their fœtuses, either during gestation or after birth. But by killing the fœtuses on their attaining an age of some weeks or months he succeeded, by inoculating healthy guinea-pigs with their organs, in giving rise to indisputable tuberculosis, with the presence of bacilli and characteristic lesions. The failure of the former experiments is understood if we admit that the fœtus already tuberculous at birth presents bacilli in only a very small proportion. But according to Landouzy the bacillus is clearly transmissible from mother to fœtus, and even when it escapes detection various signs of degeneration, such as malformations and dystrophies, are to be found in the offspring.

The Water-Supply of Paris.

M. Colmet-Daage, chief engineer of water-supply and sanitation, gave account of the measures in view to increase the water-supply of Paris at the sitting of the Municipal Council on Oct. 25th. According to his calculations, the city can count next year on 80,000 cubic metres of filtered and sterilised water conveyed through the mains of Saint Maur. It will also be possible to complete the aqueduct of Loing with 20,000 cubic metres from a source in the environs of Nemours; this supply would cost 1,200,000 francs. It would provide for immediate relief, after which the doubling of the capacity of the filter basins at Ivry would give in 1915 an additional 60,000 cubic metres. The sources of the Voulzie, the Durtein, and the Dragon would afford yet another 70,000 metres. But as a sensible increase in the needs of the population, and of the population itself must be anticipated, the Prefect of the Seine and M. Colmet-Daage are taking in hand projects of even greater importance.

The Medical Internes of Toulon.

The six internes of the hospital of Toulon have sent in their resignations. They complain of the rigorous *régime* to which they are submitted by the members of the hospital commission and the physician in chief. They will continue their service, however, for four days, so that the patients shall not be left uncared for.

The Cayor Fly.

On Oct. 25th M. Bouvier presented to the Academy of Sciences a communication by M. Roubaud on the evolution of an African fly, the Cordylobia anthropophaga. It was known that this dangerous larva lives in the skin of man and the domestic animals, in which it gives rise to multiple furuncular tumours having a central orifice; but its mode of penetration thither and its life-history were hitherto unknown. By experiments and observations made in the laboratory of Bammako, the author has demonstrated the following facts: The fly deposits its eggs, about 150, not on the body of the host, but in the earth. After 48 hours the primary larvæ emerge and set about finding a host, being able to exist for ten days without nourishment. They climb along the hairs, and once on the skin they form a tumour wherein they dwell during their transformation into secondary and then tertiary larvæ. In ordinary circumstances the total duration of their evolution does not exceed a week. The European may become infected by the young larvæ, which stick to linen that falls to the ground in the cabins, but he is an unusual host. For the native, who sleeps on the ground, infection is of course much easier.

The French Congress of Medicine.

The twelfth session of the French Congress of Medicine was held at Lyons from Oct. 23rd to the 25th. By a happy inspiration the organisers of the Congress arranged its opening for the jubilee of Professor Lépine, who has just retired at Lyons. His friends, pupils, and admirers met in the amphitheatre in which he has always taught. Professor Roque, his successor, spoke in the name of the old pupils. Then Professor Collet presented to M. Lépine a Jubilee Book, the memoirs in which emanated not only from French but also from foreign scientists. M. Cazeneuve, as a Senator, paid a tribute to the great services rendered to French science by M. Lépine; then M. Landouzy, Dean of the Faculty of Medicine of Paris, Professor Henrijean of Liége, and Professor Joubin, Rector of the University of Lyons, who presided at the ceremony, spoke in succession. Finally, M. Lépine, after expressing his thanks, transferred to his colleagues of the Faculty all the eulogiums that had been pronounced on him for the increasing success of the Lyons school. The first session of the Congress took place in the great amphitheatre of the Faculty of Medicine and was attended by 800 members, presided over by M. Hériot, the Mayor of Lyons. After delivering the opening address the Mayor surrendered the presidential chair to Dr. Chauveau. Diabetes, with its grave complication of coma, first engaged attention. In a discussion on the best diuretics Professor Pic gave a *résumé* of his work on this subject. Professor Widal, Professor Abrami, Professor Chauffard, and M. Nolf discussed icterus due to fragility of the blood cells, which broke up losing their colouring matter and staining the tissues. Dr. Rouget presented a report upon cerebro-spinal meningitis. Finally, arsenobenzol gave rise to numerous discussions. After an acknowledgment of its merits the conclusion was arrived at that it was necessary to distrust solutions made with too stale sterilised water, and it was emphasised that arsenobenzol is a dangerous drug, which must be administered with prudence and reserve if the arteries, the kidneys, and the liver are not in sound condition.

Oct. 30th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The Therapeutic Action of Salvarsan.

THE annual congress of the German Association of Naturalists and Medical Men was this year held in Karlsruhe, when Professor Ehrlich read a paper on salvarsan. In dealing with the question of the alleged dangers connected with its administration, he said that recently every death of a syphilitic patient treated by salvarsan had been indiscriminately attributed to the remedy itself. He mentioned a remarkable instance in which a death at first assigned to this cause was afterwards ascertained to have been a case of murder. Painful induration and subsequent thrombosis of the veins were due to the injected solution having been made too alkaline, so that the walls of the veins were eroded. The troubles of the bladder observed in Prague were caused by a decomposition of the preparation which had been exposed to the air. Undesirable symptoms, such as headache, vomiting, and diarrhœa, had been found to be due to the use of impure water containing bacteria; and in this connexion Professor Ehrlich mentioned experiments carried out by Dr. Jakimoff showing that certain bacteria increased the toxicity of salvarsan. Some patients after an injection showed certain nervous troubles, especially affecting the auditory nerve, the explanation being that when a nerve was enclosed in a narrow channel and a reaction in the form of a swelling of the neurilemma was caused by the salvarsan, a compression of the nerve must necessarily occur, and deafness might result. The symptoms in question might commence either some hours or some days after the injection, according to the accessibility of the nerve. The so-called relapsing disorders of the optic and auditory nerves occurring after intervals varying from three to five months were also caused by their inaccessibility, and not by arsenical poisoning. According to statistics collected by Dr. Benario 194 cases of such relapses after treatment by salvarsan and 122 after treatment by mercury were described in medical literature during the same space of time; these symptoms were therefore not due to arsenical poisoning. A very few deaths have, however, happened during treatment by salvarsan, and in these cases the necropsies showed hæmorrhagic encephalitis, which was observed only after infections and the action of toxic substances. Such mishaps might in future be avoided if patients presenting nervous symptoms were from the beginning treated by small but repeated doses of salvarsan. Absolute rest after the injection was very important. In view of the fact that more than 100,000 injections must have been given the proportion of accidents was comparatively small. The "sterilisatio magna"—the radical cure of a patient by a single injection which destroyed all the disease germs—has been successful in relapsing fever and in framboesia, the latter being a tropical disease which many have regarded as incurable. Professor Ehrlich mentioned that in a hospital in the Dutch colony of

Surinam injections were given to 328 patients suffering from frambœsia, the result being that the last patients could be discharged recovered at the end of a fortnight, and the hospital was accordingly closed. Among 900 cases of frambœsia there were only three in which the treatment was unsuccessful. Bilharziosis, Aleppo boil, and glanders have also been completely cured by one injection. In trypanosomiasis and in sleeping sickness salvarsan was unfortunately less efficacious. In the early stage of syphilis—namely, in that of chancre and roseola—there was complete recovery in 90 per cent. of the cases.

Fæcal Accumulation as a Cause of Bronchial Asthma.

Professor Ebstein of Göttingen, writing to the *Deutsche Medizinische Wochenschrift*, has stated that a connexion exists between bronchial asthma and coprostasis. He mentioned the case of a boy of 8 years of age who had been suffering for a long time from bronchial asthma and in whom it was observed that the asthmatic seizures decreased after a stay on the seaside, but subsequently became as frequent as before. Professor Ebstein found the patient's rectum and colon filled with great masses of hardened fæces, which were only removed after repeated enemata of sesame oil, the effect of this treatment being that the asthmatic attacks disappeared for good. Another case was that of a woman, aged 42 years, who had been suffering for several years from dyspepsia and chronic constipation and in whom severe attacks of bronchial asthma developed, which completely disappeared as soon as the coprostasis was relieved. After nine years there was a return of the asthma, and it was then found that constipation was again present. By therapeutic measures the constipation was overcome and the asthma once more disappeared. This was not likely to have been a mere coincidence, because the asthmatic attacks became less frequent as soon as the intestines were evacuated. Professor Ebstein is of opinion that bronchial asthma was in these cases caused by the absorption of toxins from the contents of the intestines. The nature of these toxins has not yet been ascertained, but it was advisable that in every case of bronchial asthma the state of the intestines should receive attention, and if there was fæcal accumulation, appropriate treatment should be resorted to.

Acromegaly Caused by Fright.

Professor Pel of Amsterdam has published in the *Medizinische Klinik* two cases in which acromegaly developed after a fright. Both the patients were females, one of them, aged 25 years, having been terrified by an explosion of gas, and the other, aged 26 years, by an outbreak of fire. In both cases the first symptom was amenorrhœa, which was in course of time followed by acromegaly. Radiography showed that the sella turcica was enlarged, but symptoms of cerebral pressure were present in only one patient. Together with an instance described previously by the same author, there are now on record three cases in which the disease has been the sequel of a violent psychical impression, so that a mere coincidence is rather unlikely. Professor Pel, after remarking that Graves's disease was well known to be caused by impairment of the function of the thyroid gland, and that diabetes might depend on disordered action of the pancreas, said that the hypophysis belonged, like the pancreas and the thyroid gland, to the class of ductless glands or glands with internal secretion.

Oct. 30th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

The Medico-Military Service.

THE silent celerity with which the Italian War Office organised the expedition for the annexation of the Tripolitania has evoked the admiration of foreign Powers, to whom, indeed, the fact has come with something of a surprise. When to this is added the completeness and the efficacy of the equipment, down to the minutest detail, the admiration and the surprise are equally enhanced, remembering, as the said Powers must do, the celerity without silence and the equipment, far from efficacious, with which Italy's campaign in Abyssinia closed in the disaster of Adowa. But the lesson of 1896 has borne salutary fruit in 1911, and the Italian War Office of the latter year is as superior to that of the former as the generalship of Caneva is to that of Barattieri. In no department of the present enterprise is the superiority in question more conspicuous than in the army medical service, up-to-date as it is in every particular, and inspired with a forethought and a thoroughness of good augury. Hospital service, whether stationary or mobile, "sections" of surgical or medical relief (*sezioni di sanità*), down to tents improvised for treatment in either sense—all are in evidence within and without the area of fire, with a completeness and an efficiency quite novel in Italy's medico-military record, and excelled by few, if any, of her sister Powers. Every unit of the service is provided with acetylene searchlights supplementary to those of the combatant force for seeking out the wounded. Nor is the commissariat one whit below the standard of medical requirements. No campaign has yet failed to inculcate the lesson that while its dead and wounded are infinitely fewer than its ailing and invalided, the chief cause of these latter is the defective or positively deleterious nutriment served out to the soldier, condemned, as he often is, to wait for long hours spent under fire or on the march, in expectation of food, bad in itself and worse cooked. This source of suffering has been minimised, not to say annulled, by the provision now made for the refection of the expeditionary force, portable cooking apparatus of the best type and yielding the best results being now in operation, most of it, moreover, of Italian invention and construction. Keeping in immediate touch with the troops, this apparatus supplies the force after a march of 16 miles with a warm meal, as palatable as it is sustaining and restorative, to the great comfort and exhilaration of the soldier. Special care has been bestowed on the bread, which, thanks to the acetylene illumination, can be prepared at night, so as to be fresh, crisp, and appetising at the morning meal. If, as now seems possible, we must not count on a speedy issue of the campaign, the responsibilities of the medico-military service may become very heavy, and it is well to know that the service appears to be ready to meet all calls.

The International Monument to Cesare Lombroso.

While cordially approving of the tribute about to be paid by international coöperation to the founder of "Criminal Anthropology," Professor Hans Evensen, director of the Criminal Asylum at Drontheim, in a lecture delivered there and just published at Christiania, does not see eye to eye with Italians in their estimate of the man and his work. Crediting Lombroso's theory of the genesis of pellagra with little more than a stimulating value for the better inspired researches of Terni, Sambon, and Alessandrini, Professor Evensen enlarges on the merit of his work in connecting crime with atavism and epilepsy, and holds that, if Lombroso's type of delinquent has never been fully accepted, the great majority of experts are in accord with him as to the existence of the "delinquente nato" or "criminel né"—the individual, to wit, who from infancy is devoid of the capacity of harmonising his conduct with moral criteria, owing to his brain being insufficiently developed or deteriorated through lesions operative before birth. Even in very favourable circumstances, such an individual (says the Norwegian criminologist) will be found to transgress the laws imposed by society for its own protection. Professor Evensen, in his estimate of Lombroso's best-known publication—that on genius and madness—traces its defects to the fact that the author too often accepted his data on trust without personally examining and testing them. Lombroso, moreover, in resolving into epilepsy whatever is pathologically abnormal in the mental growth of the human subject exceeds the bounds of legitimate induction, the fact being (according to Evensen) that epilepsy has no preponderating part in delinquency, still less in the development of "genius." The great and indisputable merit of the Italian criminologist lies in his having been the pioneer of research in the "frontier regions" of his science—virgin soil which he was the first to cultivate, overrun as it was, and still is, by weeds of every kind. "Few works of our century," says Professor Evensen, "have wrought so many reforms as that on the 'Uomo Delinquente.'" Lombroso's powerful imagination sometimes ran away with him, giving form to theories often unsubstantiated by fact. But even such imagination as his has its indefeasible value, speculation and intuition being factors with which science can never dispense.

Oct. 22nd.

BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

Hygiene of Tobacco-smoking.

IN a paper on tobacco-smoking published in a recent number of the *Orvosok Lapja* Dr. Pekanovics described some of the injurious effects of this practice. He said that besides nicotine, tobacco-smoke contained nicotianine, collidine, and other pyridine derivatives, acids, resins, carbon dioxide, hydrocyanic acid, and ammoniacal salts. Two drops of nicotine placed on a dog's tongue produced in succession efforts to swallow, great weakness, convulsions, and death in less than a minute; eight drops of it were sufficient to kill a horse. Tobacco contained from 2 to 8 per cent. of nicotine, and M. Le Bon, a French observer, has determined that though most of this was changed in smoking it was converted into other pyridine bodies which were just as poisonous. Dr. Pekanovics found that these bodies did not condense to any great extent in the warm mouth, and were mostly exhaled, so that the physiological effect of ordinary smoking was not very marked. Susceptible persons might, however, be much affected by breathing the air of a room in which there was much tobacco-smoke. The action of nicotine had been shown by the investigations of Petit to be intermediate between that of the bromides and of digitalis. It soothed the nervous system, but caused a powerful and rapid contraction of the vessels and a rise in blood-pressure. Among its dangers, therefore, one of the best known was angina pectoris, perhaps due to spasm of the coronary arteries. Through prolonged use it promoted the development of arterio-sclerosis. Tobacco was a "habit-drug," like opium, cocaine, and alcohol, and its devotee lost the force of will necessary to stop the habit, though he knew it was harming him. Tobacco-smoke had apparently no bactericidal action on any micro-organisms present in the lungs. One of the first effects of an overdose was nausea, and prolonged smoking was a distinct factor in the production of digestive troubles.

Short-sightedness in School Children.

Dr. Bogdan has given in the *Orovsok Lapja* an account of his examination of 200 school text-books from a sanitary point of view. He has here drawn particular attention to the fact, already established by many prominent investigators, that short-sightedness in children either originated or developed in connexion with school education. The chief causative agency was, in fact, to be found in too prolonged reading, writing, and drawing, whereby visual accommodation as well as convergence were greatly fatigued. Undue strain of the muscles of accommodation caused an active hyperæmia; the return flow of the venous circulation was greatly hindered, there was an increase of the intra-ocular pressure, and the sclerotic was gradually stretched. Too strong convergence worked even greater harm for the eye in various ways. It must also be observed that in some of the children short-sightedness was hereditary, and they became affected much sooner than their healthy comrades. In addition to the above causes producing short-sightedness, mention must be made of insufficient admission of light in many schools; a similar remark applied to unsuitable desks and other school furniture. As regards the influence of books on the eyesight, Dr. Bogdan insisted that paper should not have a glossy surface, for under artificial light a surface of this kind prevented the eye from seeing well and necessitated moving the book to and fro, as well as frequent changes in the position of the head. Again, the paper should be thick enough to prevent the printing of the next page from obtruding itself upon the reader's eye. A few authorities have recommended yellow paper, but the majority were in favour of white paper, which gave a better contrast between the printed matter and the background.

A Case of Rhinophyma.

An interesting case of this rather rare condition, in which operation was followed by remarkably good results, was reported by Dr. Imre Fischer at a meeting of the Nagyvárad Medical Society on Oct. 1st. The patient was a man aged 65 years. There was no history of injury. Some years ago he had what was probably an attack of acne rosacea in which the nose and the adjacent borders of the cheeks were most prominently affected. This was followed by a nodular growth of the nose which involved all of that organ except the upper fourth. The growth gave rise to no pain. Breathing was not interfered with, but the projecting mass caused much difficulty in eating. The operation consisted in the making of an elliptical incision with removal of the enclosed part followed by shaving of the growth on each side. Contrary to expectation there was very little hæmorrhage. The cosmetic result was very good, an interesting point being that over the area where the growth was simply shaved off skin of normal appearance has been reproduced instead of scar tissue; this was chiefly due to the fact that after the removal of the growth the whole surface was touched with a pencil of carbonic acid snow. Histological examination of the removed tissue showed it to be a soft fibroma of the skin with conspicuous distension and possibly hyperplasia of the sebaceous glands.

Treatment of Epilepsy.

Dr. Rene Berkovics recommends the double bromide of rubidium and ammonium in the treatment of epilepsy; he has seen decidedly better results with this salt than with other bromides. The action is in the main the same, since the rubidium does not exercise any specific effect. The daily dose is 4 to 7 grammes; 4 or 5 grammes given at night are an excellent hypnotic.

Oct. 28th.

NOTES FROM SOUTH AFRICA.

(FROM OUR OWN CORRESPONDENT.)

Libel Action against General Hertzog.

Dr. A. B. Ward, President of the Medical and Pharmacy Council of the Orange Free State, has instituted legal proceedings for alleged slander against General Hertzog, Minister of Justice. He is claiming £1000 as damages. The case arises out of speeches made by General Hertzog at Smithfield and Fauresmith last year during his electioneering campaign, when he attacked the Medical and Pharmacy Council in connexion with its action in refusing to issue licences to practise to two young medical men holding the certificates of the German Staats Examen, in accordance with a ruling furnished by the Council's legal adviser. The plaintiff in the action avers that the words used by defendant mean that plaintiff, in conjunction with certain other members of the Council, acting in their official capacity, had adopted a biassed, unjust, and discreditable attitude, and had generally abused the position and powers conferred upon them by the law. It is expected that the case will be heard during the November term in the Provincial Division of the Supreme Court at Bloemfontein. This is the second libel action which has been taken against General Hertzog in connexion with his electioneering campaign, the first having already been taken by an inspector of schools who had been dismissed by General Hertzog when Minister of Education in the Orange River Colony. Dr. Ward and his colleagues on the council, after the alleged slander was published, endeavoured to elicit from General Smuts, the Minister of the Interior, a statement that he, as the responsible Minister, was satisfied that the council had acted rightly, and on failing to get a satisfactory answer from the Minister and subsequently from the Cabinet resigned their positions on the council. All the elected members who resigned were, however, re-elected to the council by large majorities, and Dr. Ward was again elected president by the council. He has thus been vindicated by the profession, and it remains to be seen how he fares in the law courts.

Monthly Meeting of Chamber of Mines.

At the last monthly meeting of the Chamber of Mines Mr. H. Webber, the President, made a most interesting speech which indicates that the chamber intends taking active measures in endeavouring to reduce the appalling mortality occurring amongst native mine labourers. The President, *inter alia*, alluded to a research now being undertaken by Dr. Macaulay on behalf of the chamber into the quality of the mealie meal and rice supplied to natives on the gold-fields, and stated that the results so far obtained showed that in a number of samples analysed some of the most important food constituents of the grain appear to be eliminated as waste in the course of grinding and preparation, and that it has been ascertained that these are sold separately as food for cattle. This may possibly prove of some importance in connexion with the prevention of scurvy. Mr. Webber also expressed the hope that the engagement of Sir Almroth Wright for the purpose of carrying out an investigation into the question of

immunisation against epidemic pneumonia might result in the disease being eradicated from the native compounds, where for so many years it has been so terribly prevalent. He also announced that the medical officer for the Witwatersrand Native Labour Association had been sent during the year to investigate sleeping sickness, more particularly in order to ascertain what probability there was of the disease being introduced into South Africa by means of labourers recruited for the mines from the north. He stated that Dr. G. A. Turner, the medical officer referred to, had just returned and had reported quite definitely that there was no danger whatever of the disease ever breaking out in the rand compounds even if introduced from outside.

Farewell Dinner to a Practitioner.

Dr. W. Watkins-Pitchford, who has been transferred to Johannesburg, was entertained before he left at a farewell dinner.

The Need for Public Slaughter-houses in South Africa.

The conditions under which animals are slaughtered for food in most South African towns are very unsatisfactory. The majority of local authorities appear to be of the opinion that as long as the animals are killed out of the public view, and the meat exposed for sale in reasonably clean premises, nothing else matters. Accordingly the slaughter-houses in use are generally insanitary and filthy, and without a water-supply and proper drainage, whilst those engaged in slaughtering are generally dirty in their persons and clothing. In connexion with most slaughter-houses there are a number of natives employed, and it is not uncommon to find amongst these some afflicted with syphilis, tuberculosis, or some other prevalent disease. The meat is conveyed to the shops in wheelbarrows or wagons, exposed to sun and dust, or else merely covered with a dirty tarpaulin. In a few but happily in an increasing number of urban areas the public meat-supply is under proper supervision. Thus the enterprise of the Johannesburg Town Council has resulted in the erection of a large public slaughter-house which supplies meat slaughtered under supervision not only to the inhabitants of the town, but also to a considerable extent those of the other mining towns along the Reef. Bloemfontein also has its public slaughter-house. Durban is understood to be contemplating the same, although this area is equipped with fairly good private slaughter-houses which are worked under close municipal supervision. In the Cape Peninsula municipalities it is stated that a most revolting state of affairs exists, owing to the fact that the owners of private slaughter-houses have been for some years under notice to cease slaughtering in the same. The operation of the closing orders has apparently from time to time been suspended, while the various municipalities have been negotiating amongst each other for the erection of one or more joint public slaughter-houses. These negotiations have been going on for a period of six or seven years, the difficulty being that the municipalities could not come to an agreement as to a site. It is understood that this difficulty has at last been solved, and that the ratepayers of the respective municipalities have sanctioned an expenditure of £35,000 for the purpose of erecting a slaughter-house under joint control. In view of the population to be served, it is understood that the municipal experts are very doubtful if adequate premises can be erected for such a small sum. However, the buildings can always be extended if this proves to be needed, and the closure of the existing slaughter-houses should now be possible within the course of the next few months.

Oct. 2nd.

Obituary.

STANLEY SMITH, M.D. DURH., M.R.C.P. LOND.

WE regret to announce the death of Dr. Stanley Smith, which took place at his residence, Wimpole-street, Cavendish-square, on Oct. 25th, in the sixtieth year of his age. Dr. Stanley Smith received his medical education at London Hospital, and after taking the Membership of the Royal College of Surgeons in 1877 was for a short time house physician to the hospital from which he had qualified. In 1882 he took the L.R.C.P. and L.M. diplomas of Edinburgh, and in 1895 became a Member of the Royal College of Physicians of London and a Doctor of Medicine of the University of Durham. He was physician to the Railway Clearing System Superannuation Fund Corporation. His contributions to medical literature included Empyema: Simple Drainage with Antiseptic Precautions, which was published in THE LANCET in 1882, and Notes on the Treatment of Diphtheria, published in the *British Medical Journal* in 1887.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Oskar Wilhelm Aschenborn, medical adviser to the Prussian Ministry of the Interior. He formerly held various honorary appointments in connexion with the medical associations. His age was 60.—Dr. Julius Caspary, emeritus professor of dermatology in the University of Königsberg. He edited formerly the *Archiv für Dermatologie und Syphilis*, and contributed to Eulenburg and Samuel's great text-book. He was 75 years of age.—Dr. Piettre, member of the French Senate.—Dr. Henry Gibbons, professor of midwifery and gynæcology in Cooper Medical College, San Francisco.—Dr. J. A. Wilder, professor of pathology in the Denver and Gross College of Medicine.

THE REAPPEARANCE OF PLAGUE IN SUFFOLK.

PLAGUE bacilli have been found in the sputum of a seaman who was admitted on Oct. 10th into the sick quarters of the Naval Barracks at Shotley, in Suffolk, apparently suffering from pneumonia. The patient was isolated as soon as suspicions were aroused of the true nature of his complaint. No other cases have been reported, and it appears from an official communication from the Local Government Board that the origin of the infection is not known.

Thus it would seem that a case of pneumonic plague has arisen this autumn in the same corner of East Suffolk in which various cases of supposed human plague were reported about a year ago, and in which plague-infected rats were undoubtedly then present in considerable numbers. The subject of plague in rats and man, with special reference to the Suffolk epizootic of rat plague and the risks of human plague in England, has been dealt with in detail in various recent issues of THE LANCET.[1] In these articles we have traced the history of the East Anglian cases and of previous outbreaks in this country, and have discussed the special circumstances which are likely to affect the appearance and spread of plague at home, and have outlined the measures which should be taken to avert an epidemic of this disease in the event of further cases arising.

The present case of pneumonic plague on the bank of the river Orwell should of course give rise to searching inquiry and the most vigorous precautions, for the pneumonic type of the disease, which is by far the less common, is also by far the more infectious in human beings. Because there have been but few cases of plague in this country for so many years it does not follow that we can afford to relax our guard; and, indeed, the lesson of history shows that such a course invites disaster. But there is no justification for a scare. The present high state of efficiency in sanitary administration and the improved standard of domestic cleanliness in this country must prove strong factors in the limitation and control of plague, as was shown by the experience of Glasgow in 1901. The personal conditions which favour the spread of such a disease among the ignorant natives of India are almost non-existent in this country. Moreover, the Norwegian rat, which has exterminated the black rat in this country, is not primarily a house rat, but a dweller in sewers, docks, and barns, while the British rat-flea, unlike the Indian variety, has little or no taste for human blood. It seems probable that the prompt notification and isolation of all doubtful cases, together with accommodation for keeping contacts apart and under observation, and facilities for preventive inoculation, provided they are associated with wholesale systematic rat destruction in infected areas, would amply safeguard the inhabitants of these islands against anything like a serious epidemic of plague. If rats can be kept outside houses the risk of human plague infection becomes very small.

[1] THE LANCET, Nov. 5th, 1910, p. 1353; Nov. 19th, 1910, p. 1497; Dec. 31st, 1910, p. 1903; and Sept. 2nd, 1911, p. 697.

THE RESEARCH DEFENCE SOCIETY AND ANTI-VIVISECTION SHOPS.

WE have received the following important letter from the officials of the Research Defence Society, whose action in distributing widely their vigorous appeal will receive general commendation :—

SIR,—We desire to make a special appeal, for the purpose of undoing the harm which is done by anti-vivisection shops and processions. The exhibits in these shops are of a most misleading nature; and the truth as to anæsthetics is carefully concealed. No operation, more than the lancing of a vein just under the skin, is allowed to be done on any animal in this country, unless the animal is under an anæsthetic throughout the whole of the operation.

It will be remembered that one of these shops, on the death of H.M. King Edward VII., distributed a leaflet suggesting that His Majesty's death was due to medical treatment.

We have, of course, received many complaints against these shops. We find that the police have no power to close them: and we can only place men outside them, to give our leaflets to passers-by.

But this constant giving of literature is a heavy expense to our society. We therefore appeal for special contributions toward this purpose. We make this appeal with confidence, for we are sure that the public recognises the grave harm which is done by these shops, especially to children. All contributions should be sent to the hon. treasurer, Research Defence Society, 21, Ladbroke-square, London, W.

We may, perhaps, take this opportunity of mentioning that a letter has just been received from Sir Apolo Kagwa, K.C.M.G., the Prime Minister of Uganda. It is dated from Mengo, Uganda, Sept. 26th. "I really think," he says, "that in a few years' time sleeping sickness will be extinct in Uganda, and people will become immune from the disease." If this happy result is obtained, it will, without doubt, be due to the work done by the Royal Society Commission, who gained their knowledge on the subject by experimentation on animals.

We remain, yours faithfully,

CROMER, President.
SYDNEY HOLLAND, Chairman of Committee.
F. M. SANDWITH, Hon. Treasurer.
STEPHEN PAGET, Hon. Secretary.

21, Ladbroke-square, London, W., Nov. 1st, 1911.

THE ROYAL SANITARY INSTITUTE.—A sessional meeting of the Royal Sanitary Institute will be held at 90, Buckingham Palace-road, on Nov. 14th, when a paper will be read on "Sewage Farms," by Mr. H. A. Roechling, M.Inst.C.E. Among those who have promised to take part in the discussion are: Professor A. Bostock Hill, Professor Henry R. Kenwood, Dr. George Reid, and Dr. S. Rideal, D.Sc. The chair will be taken at 8 P.M. by Mr. H. Percy Boulnois, M.Inst.C.E., and a general discussion will be invited. Tickets for admission of visitors may be had on application to the secretary at the institute.

LITERARY INTELLIGENCE.—Messrs. J. and A. Churchill announce for early publication the second edition of "A Short Practice of Medicine," by Dr. R. A. Fleming, in which considerable additions and alterations have been made; the second edition of "Essentials of Surface Anatomy," by Charles R. Whittaker, of which a new feature is the introduction of 12 coloured plates; "The Tobacco Habit, its History and Pathology: a Study in Birth-rates: Smokers compared with Non-smokers," by Dr. H. H. Tidswell; and "Cocoa and Chocolate: its Chemistry and Manufacture," by R. Whymper.—Messrs. Baillière, Tindall, and Cox announce that they have been authorised by the Department of Education of the Sudan Government to publish the Fourth Report of the Wellcome Tropical Research Laboratories, Khartoum. The third report was issued in 1908. The fourth report is in three volumes. Volume A, Medical, represents the research and routine work of the bacteriological section, together with papers on the work of Sleeping Sickness and Kala-azar Commissions; Volume B deals with General Science; and Volume C consists of a second review of Some Recent Advances in Tropical Medicine.

Medical News.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Dr. Wilhelm Ceelen has been appointed Prosector of the Pathological Institute of the University in succession to Dr. Beitzke, who is migrating to Switzerland. Dr. Oskar Rumpel, *privat-docent* of Surgery, has been granted the title of Professor. Dr. Adolf Magnus-Levy, whose researches on the pathology of metabolism have attracted much attention, has been appointed Director of the medical side of the Friedrichshain Hospital in succession to the late Dr. Krönig.—*Breslau:* Dr. Julius Strasburger, of the Bonn Policlinic, has been offered the Directorship of the Policlinic with an Extraordinary Professorship, in succession to the late Dr. Richard Stern.—*Cagliari:* Dr. A. Gentili has been recognised as *privat-docent* of Midwifery and Gynæcology.—*Catania:* Dr. F. Pulvirenti of Rome has been recognised as *privat-docent* of Midwifery and Gynæcology.—*Florence:* Dr. P. Rondoni has been recognised as *privat-docent* of General Pathology; Dr. Ugolotti as *privat-docent* of Neurology and Psychology; Dr. F. Leoncini as *privat-docent* of Forensic Medicine; Dr. A. Rossi as *privat-docent* of Surgery and Operative Medicine; and Dr. I. Cappelli and Dr. M. Nencioni as *privat-docenten* of Dermatology and Syphiligraphy.—*Genoa:* Dr. A. Maggione has been recognised as *privat-docent* of Odontology.—*Göttingen:* Dr. Stich of Bonn has been appointed to the chair of Surgery in succession to the late Dr. Braun.—*Königsberg:* Dr. P. L. Friedrich of Marburg has been appointed Professor of Clinical Surgery in succession to Dr. Payr. Dr. Martin Hahn of Munich has been offered the chair of Hygiene.—*Lausanne:* Dr. Beitzke of Berlin has been appointed to the chair of Pathological Anatomy in succession to the late Dr. Stilling.—*Naples:* Dr. F. Galdi has been recognised as *privat-docent* of Medicine.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.—The usual monthly meeting of the executive committee of the Medical Sickness, Annuity, and Life Assurance Society was held at 429, Strand, London, W.C., on Oct. 20th. There were present: Dr. F. de Havilland Hall (in the chair), Dr. J. Pickett, Dr. A. C. Hartley (Bedford), Dr. M. G. Biggs, Dr. F. C. Martley, Mr. F. S. Edwards, Dr. St. Clair B. Shadwell, Mr. J. Brindley-James, Dr. F. J. Allan, Dr. Frederick S. Palmer, Mr. H. P. Symonds (Oxford), Dr. M. Greenwood, Dr. R. Hutchison, and Dr. J. B. Ball. The accounts presented showed that the business for 1911 has so far been very good. A considerable margin has been secured in the sickness claims and also in the interest earned by the funds, while the management charges have been well under the amount allowed by the rules. The financial result therefore is very satisfactory, and the funds, now amounting to about a quarter of a million sterling, are still rapidly growing and are ample to provide for all claims that may arise. Prospectuses and all further particulars may be obtained on application to Mr. F. Addiscott, secretary, Medical Sickness and Accident Society, 33, Chancery-lane, London, W.C.

DONATIONS AND BEQUESTS.—The late Countess Dowager of Seafield has left the following legacies: £1000 to the Infirmary, Inverness; £1000 to the Chalmers' Hospital, Banff; £18,000 to the trustees on behalf of the Ian Charles Cottage Hospital, Grantown, the income of which is to be applied towards the maintenance and upkeep of the hospital, and the necessary expenses connected therewith, any surplus to be accumulated and to be available for the expenses thereof in subsequent years. The testatrix empowers the trustees (should they think it necessary) to enlarge and extend the building, and for that purpose to use the savings of income from the endowment of £18,000 under her last will and testament. Should the trustees find it necessary to acquire more land on behalf of the hospital, she desires the proprietors of the Strathspey estates for the time to give such land free from all charge, or for a nominal feu duty.—The honorary secretaries of King Edward's Hospital Fund for London have received £500, the current year's instalment of the £2500 voted by the Corporation of the City of London.—The late Mr. David Fenby has bequeathed £500 each, free from duty, to the Sheffield Royal Infirmary, the Sheffield Royal Hospital, the Jessop Hospital for Women, and the Crookes Orphan Homes.

TURIN EXHIBITION AWARDS.—Messrs. Burroughs, Wellcome, and Co. have secured 13 awards—eight grand prizes, two diplomas of honour, and three gold medals—for their exhibits at the Turin International Exhibition. This probably constitutes a world's record in awards received by a single firm at an exhibition open to all nations.

A PROPOSED IMPERIAL HOSPITAL AND NURSING HOME.—The demand for private nursing homes by a large number of the better class and well-to-do patients coming from the provinces and from the overseas Dominions is very great, while the accommodation provided does not adequately meet that demand. In many cases patients have no choice between a charity and a home which is not subject to medical supervision and where charges are often prohibitive. Patients may have thus a difficulty in selecting an institution suitable to their needs. In these circumstances the proposal to build a large hospital or nursing home can be justified if it is found that the scheme can be carried out in a manner likely to benefit the public at large, while leaving that public at liberty to be attended by medical men of their own choice. It is proposed that a building, for which the necessary capital of £18,000 has already been subscribed, shall be erected in Vincent-square, Westminster, and that in the first instance accommodation shall be provided for 40 beds. The management of the hospital is to be chiefly in the hands of medical men elected by a board of directors, and the charges, which will range from three guineas upwards, will be quite apart from those for professional attendance.

NATIONAL ASSOCIATION FOR THE AFTER-CARE OF THE FEEBLE-MINDED.—A meeting of this association was held at Brighton on Oct. 27th and was attended by a large number of delegates from various parts of the country. The conference agreed to place on record the fact that it had passed the following resolution:—

That this conference emphatically expresses its belief that the time has arrived when the Government should pass a Bill making permanent segregation of the feeble-minded compulsory, and urges the immediate preparation and passage of such a measure.

The conference was not quite unanimous in this resolution, but those delegates holding the view that no further powers should be given to local authorities to detain feeble-minded persons until suitable colonies have been provided were considerably in the minority. Sir William Chance, as chairman of the association, presented the after-care report and statistics for 1911, showing that the total number of cases dealt with was 3283, an increase of 527 over the previous year, and three times as many as the total number of cases under observation five years ago. The proportion of cases reported upon as doing remunerative work was 19·5 per cent. There were only 202 cases reported upon as useful at home, 28·6 were reported upon as absolutely useless to society, and 14·1 per cent. as in asylums, workhouses, or other institutions, while the number of cases lost sight of had increased from 19 to 23 per cent. for the total number of cases. 612 were those of children under the age of 14. Sir William Chance strongly urged compulsory registration and supervision of all cases of mental defect, and said the returns showed how necessary it was for the Government to take the matter boldly in hand as soon as possible and deal with it in a thoroughly scientific manner, not ousting voluntary efforts altogether but enabling them to produce better results, and rescuing, by the institution of permanent care, the many unfortunate persons who, without such care, continued to be a danger not only to themselves but to the whole community. Delegates enlarged upon the pressing need of colonies in which to segregate patients; and the case of a Brighton institution was mentioned where 50 boys and girls were being excellently brought up, but at the age of 16 had to leave and go into the streets and byways and find their own living, which they found to be an impossible task. A note of warning was sounded by a clerical delegate who held that as regards the provision of segregation colonies economy might be preached to architects. Papers were read by Dr. Helen Boyle on Methods of Dealing with Feeble-minded Cases Bordering on Lunacy; Dr. R. J. Ryle on the Origin of Feeble-mindedness; Dr. R. D. Clarkson on Scotch Methods (read by Sir William Chance in the absence of Dr. Clarkson); Dr. Isabelle Thompson Smart of New York, on American Methods (read by Dr. Potts in the absence of Dr. Smart); Dr. G. E. Shuttleworth on the Egyptian Institution; and by Dr. Alice Vowe Johnson describing Visits to the Ursberg Colony in Bavaria and the Working of the Gheel System in Belgium. All the papers were most instructive, and the conclusion arrived at in each of them was that the great object to be attained by the after-care of the feeble-minded was to render the subject a self-supporting citizen.

SHIPS' SURGEONS: A NEW DEPARTURE IN THE PENINSULAR AND ORIENTAL COMPANY.—The Peninsular and Oriental Company has instituted a new departure with reference to its surgeons. Beginning on Jan. 1st, 1912, surgeons in the service of the company will be allowed to charge a fixed fee for each consultation with first- and second-class passengers. The pay, £10 per month, remains as before.

Dr. Joseph Francis Dixon has been appointed medical superintendent of the Borough Asylum, Leicester.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The National Insurance Bill.

UNDER the "guillotine" resolution the National Insurance Bill is passing rapidly through Committee in the House of Commons, but it is not expected to reach the House of Lords until the beginning of December. Last week the discussions on the Bill referred to the conditions which societies must fulfil in order to become approved societies. The chief alteration made was the excision of the condition that approved societies must have at least 10,000 members being insured persons. This change was made at the instance of the CHANCELLOR of the EXCHEQUER, who has drafted a new clause to provide for the grouping of small societies with less than 5000 insured members. An interesting discussion arose on an amendment brought forward by Mr. GILL on behalf of the Labour Party. It was to the effect that the rules of an approved society "must not provide for medical tests as a condition of membership under this Act." The honourable Member contended that if Friendly Societies had the right to select lives they would select only the best and those which did not reach that standard would have to go into the Post Office as deposit contributors. Mr. GILL urged that by admitting good and indifferent lives, an average would be obtained, and as all had to pay alike, the risk should be taken by all the societies on an average basis. Mr. MASTERMAN, on behalf of the Government, declined to accept the amendment, on the ground that it was impracticable in application and distasteful to the Friendly Societies to compel them to take people without a medical test. Mr. BARNES pointed out that trade unions did not impose medical tests, although some of them paid sickness benefits. The result of the clause would be that the bad lives would go to the trade unions and the good lives to the Friendly Societies. Mr. RAMSAY MACDONALD elaborated this point, but the CHANCELLOR of the EXCHEQUER maintained that the Friendly Societies must have a control over the persons whom they admitted as members. The amendment was ultimately negatived without a division.

In the early days of this week the House of Commons considered clauses of the National Insurance Bill dealing with the membership of approved societies, surpluses, deficits, and deposit contributors. A very interesting debate arose on the subject of deposit contributors and on the problem of dealing with persons who for reasons of health would not be accepted as members by the approved societies.

As the result of the debate on the question of the Post Office contributors, Mr. LLOYD GEORGE accepted an amendment brought forward by Mr. SHERWELL to the effect that the scheme in relation to them should only be provisional. It was only to have effect until Jan. 1st, 1915. In the meantime other measures would have to be devised. The amendment was carried.

The Health of the Navy.

The statistical report of the health of the Navy for the year 1910 is issued as a Blue-book. In it it is stated that the returns for the year 1910 show a continuous improvement in the general health of the fleet as compared with the preceding five years.

HOUSE OF COMMONS.

TUESDAY, OCT. 24TH.

Milk and Dairies Bill.

Mr. C. BATHURST asked the President of the Local Government Board when he proposed to introduce his long-promised Milk and Dairies Bill.—Mr. BURNS replied: I am afraid that the Government programme for the autumn session will not admit of the passing of the Milk and Dairies Bill this year.

Mr. C. BATHURST: May I ask the right honourable gentleman whether he proposes to introduce this measure in the early part of next session?—Mr. BURNS: Sufficient unto the day is the goodness thereof.

Mr. WATT: Will the Bill apply to Scotland?—Mr. BURNS: No, sir.

WEDNESDAY, OCT. 25TH.

The Nutritive Value of Bread.

Mr. C. BATHURST asked the President of the Local Government Board whether he had taken any administrative, or proposed to take any legislative, action in consequence of the reports of Dr. J. M. Hamill and Dr. Monier-Williams presented to his department in reference to the adulteration of baking-powders and self-raising flour, the bleaching of flour, the addition of so-called improvers to flour, and the respective nutritive values of breads made from the different constituents of the wheat grain in varying proportions.—Mr. BURNS answered: The matters referred to are still under consideration.

Mr. C. BATHURST: How long are they likely to remain under consideration?—Mr. BURNS: The honourable Member must know, and should know, that since the two reports to which he refers in his question were issued I have had to see a number of important deputations, and I have still to see two more on the subject.

MONDAY, OCT. 30TH.

The Sale of Milk.

Mr. BARNSTON asked the President of the Board of Agriculture whether he was now in a position to state the result of the inquiries which the Board had been making as to the manner in which the existing provisions of the law relating to the sale of milk were at present administered by local authorities.—Mr. RUNCIMAN replied: The inquiry is not yet completed. I am afraid that I cannot state when I shall be able to make a general statement on this subject. The work is being carried out by inspectors who have other duties to discharge as well. I understand that they are proceeding with all possible speed. I will, however, look into the matter.

National Insurance Bill Topics.

Mr. BARNES asked the Secretary to the Treasury whether dental attention, including the supply of artificial teeth, would be allowed as medical benefit if a medical attendant under the National Insurance Bill certified that illness arose from septic teeth and gums, and that he, the medical attendant, could not do anything further for the insured person unless his teeth were properly attended to; and would a company which had been proved to have been guilty of fraud be allowed to establish an approved society.—Mr. MCKINNON WOOD answered: With regard to the first part of the question, the matter will be one for the decision of the Local Health Committee, subject to the regulations of the Insurance Commissioners. With regard to the second, the Insurance Commissioners may on sufficient grounds withhold or withdraw approval from a society or separate section of a society.

Mr. CATHCART WASON asked the right honourable gentleman to state what provision there was in the National Insurance Bill for deposit contributors in the Highlands and Islands living at great distances from any medical officer receiving adequate consideration.—Mr. MCKINNON WOOD replied: The Local Health Committees on which the deposit contributors will be represented will be responsible for providing the benefits to which the deposit contributors are entitled. The proviso to Sub-clause (2) of Clause 32 was specially inserted to enable the local committees to deal with deposit contributors separately in such cases.

Mr. KELLAWAY asked the right honourable gentleman whether he was aware that the Pharmaceutical Society of Great Britain did not recognise the pharmaceutical certificates of any British Colony; and if, under the National Insurance Bill, the holders of British-Colonial pharmaceutical certificates who were in business as chemists in this country would be prohibited from supplying drugs and medicines under the Bill.—Mr. MCKINNON WOOD said in reply: I understand that the Council of the Pharmaceutical Society of Great Britain is now engaged in negotiations with the Colonial representatives. It is hoped that it may prove possible to formulate a by law providing for the admission to the Register of Chemists of persons holding Colonial certificates of qualification equivalent to the British qualification.

Mr. KELLAWAY: Is it hoped to conclude the negotiations in time to make it possible for them to apply under the National Insurance Bill?—Mr. MCKINNON WOOD: I am not able to reply to that question.

TUESDAY, OCT. 31ST.

The Plague in India.

Mr. KEIR HARDIE asked the Under Secretary of State for India whether he could give any information concerning the progress of the plague in India, including the number of fatal cases during the past three months.—Mr. MONTAGU answered: The mortality from plague during the last three months in British India and Native States has been as follows: In July, 8987 deaths; August, 14,191; September, 28,618. There is very little plague in Northern India, only 13 deaths from it being recorded in the Punjab during September, but a severe epidemic has broken out in the Bombay Presidency, where 20,470 of the total number of deaths in September occurred. Madras and Mysore are also affected, though in a slighter degree.

The Prevalence of Anterior Poliomyelitis.

Mr. EDMUND HARVEY asked the President of the Local Government Board whether his attention had been called to the prevalence during the past year in certain districts in Yorkshire of the disease known as anterior poliomyelitis; and whether, in view of the character of the disease and its serious after-effects, he would cause investigations to be made into the nature of the disease, with a view of discovering the best means of cure and of avoiding its spread.—Mr. BURNS wrote in reply: My attention has been drawn to the prevalence of acute poliomyelitis not only in certain districts of Yorkshire, but also in several other counties, and three of my inspectors have for a considerable time past been engaged in investigations relating to it, the results of which along with information as to the pathology of the disease will be published in due course.

WEDNESDAY, NOV. 1ST.

Medical Men and the Royal Naval Reserve.

Mr. MIDDLEMORE asked the Secretary to the Admiralty whether any steps had been taken to induce medical men to take commissions in the Royal Naval Reserve, with a view to securing their professional services in war time, or whether such a step was in contemplation?—Mr. MACNAMARA said in reply: We have done a great deal in the direction suggested by the honourable Member. Revised regulations for medical officers, Royal Naval Volunteer Reserve, embodying improved conditions of service have recently been introduced and have been brought prominently to the notice of medical men throughout the country. The result so far is considered satisfactory.

BOOKS, ETC., RECEIVED.

ARNOLD, EDWARD, London, W. LONGMANS, GREEN, AND CO., New York.

International Medical Monographs. General Editors: Dr. Leonard Hill, F.R.S., and Dr. William Bulloch. Syphilis from the Modern Standpoint. By James McIntosh, M.D. Aberd., Grocer's Research Scholar, and Paul Fildes, M.B., B.C. Cantab., Assistant Bacteriologist to the London Hospital. Price 10*s.* 6*d.* net.

DOIN, OCTAVE ET FILS, 8, Place de l'Odéon, Paris.

Formulaire des Agents Physiques. Par J. Larat, Chargé du Service d'Eléctrothérapie de la Clinique des Maladies Infantiles, G. Dagron. Ancien Interne des Hôpitaux de Paris, Ray, Durand Fardel, Secrétaire général de la Société d'Hydrologie Médicale de Paris, Médecin Consultant à Vichy, et Dubois (de Saujon), Directeur de l'Établissement Hydrothérapique de Saujon (Charente-Inférieure). [Préface de G. Dieulafoy, Membre de L'Académie de Médecine, Professeur de Clinique à la Faculté de Médecine. Price Fr. 6.

Précis des Maladies des Vieillards. Par Adrien Pic, Professeur à la Faculté de Médecine de Lyon, avec la Collaboration de S. Bonnamour, Ancien Interne des Hôpitaux de Lyon, Chef de Laboratoire à la Faculté de Médecine. Préface du Professeur Bouchard. Price Fr.10.

FROWDE, HENRY, AND HODDER AND STOUGHTON, London.

Oxford Medical Publications. Practical Anæsthetics. By H. Edmund G. Boyle, M.R.C.S., L.R.C.P., Assistant Anæsthetist to St. Bartholomew's Hospital; Demonstrator of Anæsthetics to the Medical School of St. Bartholomew's Hospital. Price 5*s.* net.

LONGMANS, GREEN, AND CO., London, New York, Bombay, and Calcutta.

Elementary Experimental Chemistry. By F. H. Weston, B.Sc. Lond., F.C.S. (First-class Honours in Chemistry), Head of the Chemical Department, the Polytechnic, Regent-street, London, W. Price 2*s.*

MILLS AND BOON, 49, Rupert-street, London, W.

Nerves and the Nervous. By Edwin Ash, M.D. Lond., Assistant Physician, Italian Hospital, London; Assistant Physician and Physician for Nervous Diseases to the Kensington and Fulham General Hospital. Price 5*s.* net.

Elementary Quantitative Analysis. By F. M. Oldham, B.A., late Scholar of Trinity Hall, Cambridge; Senior Science Master at Dulwich College. Price 1*s.* 6*d.*

MURRAY, JOHN, Albemarle-street, London, W.

Further Researches into Induced Cell-Reproduction and Cancer. Consisting of Papers by H. C. Ross, M.R.C.S. England, L.R.C.P. Lond., J. W. Cropper, M.B., M.Sc. Liverpool, and E. H. Ross, M.R.C.S. England, L.R.C.P. London. The McFadden Researches. Price 3*s.* 6*d.* net.

REID, ANDREW, AND CO., LIMITED, Printing Court Buildings, Newcastle-upon-Tyne.

University of Durham College of Medicine, Newcastle-upon-Tyne. Price not stated.

STEINHEIL, G., 2, Rue Casimir-Delavigne, Paris.

Traitement Adjuvant du Strabisme. Par F. Terrien, Professeur agrégé à la Faculté Ophtalmologiste de l'Hôpital des Enfants-Malades, et Hubert, Ancien Assistant d'Ophtalmologie des Hôpitaux. Price Fr.4.

Étude sur les Fractures de l'Extrémité Inférieure de l'Humérus chez l'Enfant (Résultats éloignés). Par le Docteur André Trèves, Ancien Interne des Hôpitaux de Paris et de la Clinique Chirurgicale Infantile de la Faculté, Assistant de Chirurgie Orthopédique à l'Hôpital des Enfants-Malades. Price Fr.10.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ADAMS, MARTHA, M.B., B.S. Glasg., has been appointed Lady Medical Inspector to the Essex Education Committee for six months.

ALDERSON, G. G., M.B., B.C., has been appointed Obstetric Assistant to University College Hospital.

BARBER, P. E., L.R.C.P. Lond., M.R.C.S., has been appointed Professor of Midwifery in the University of Sheffield.

BARRIS, J. D., M.B., B.C. Cantab., F.R.C.S. Eng., has been appointed Assistant Physician to the City of London Lying-in Hospital.

BENTON, GRAHAM M., M.B., Ch.B. Vict., has been appointed Sixth Anæsthetist to the Manchester Royal Infirmary.

BRENTNALL, C. G., M.B., Ch.B. Vict., has been appointed House Physician at the Manchester Royal Infirmary.

BUCK, HOWARD, M.B., Ch.B. Vict., F.R.C.S. Eng., has been appointed Resident Surgical Officer at the Manchester Royal Infirmary.

CHILD, W. N., M.R.C.S., L.R.C.P. Lond., has been appointed Resident Medical Officer at the British Lying-in Hospital.

CHUBB, G. C., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon at University College Hospital.

CONDY, E. M., M.B., B.Ch. R.U.I., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Clonavaddy District of the county of Tyrone.

COOPER, F. W., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Trillick District of the county of Tyrone.

COURTS, A. C. S., M.B., B.S. Lond., has been appointed House Physician at University College Hospital.

CRESSWELL, FRANK PEARSON SKEFFINGTON, M.B., B.S. Lond., F.R.C.S. Eng., has been appointed one of the Medical Referees under the Workmen's Compensation Act for County Court Circuits Nos. 24, 30, and 31.

DARLING, H., M.B., B.S. Lond., has been appointed House Physician at University College Hospital.

DIXON, JOSEPH FRANCIS, M.D. Dub., has been appointed Medical Superintendent of the Leicester Borough Asylum.

DOWNING, C., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Cardiff District of the county of Glamorgan.

FOWLER, W. C., M.B., B.S. Lond., has been appointed House Surgeon at University College Hospital.

HEDLEY, JOHN PRESCOTT, M.B., M.C. Cantab., F.R.C.S. Eng., M.R.C.P. Lond., has been appointed Physician to Out-patients at the British Lying-in Hospital.

HEY, WILSON H., M.B., Ch.B. Vict., F.R.C.S. Eng., has been appointed Visiting Surgeon to the Manchester Children's Hospital, Medical Superintendent to the Christie Cancer Hospital, Manchester, and Assistant Surgical Officer to the Out-patient Department at the Manchester Royal Infirmary.

HIBBERT, CECIL, F.R.C.S. Edin., has been re-appointed Medical Officer to the Central Branch of the Manchester Royal Infirmary.

HUTCHINSON, JAMES RANDAL, M.D. Vict., D.P.H., has been appointed Medical Inspector under the Local Government Board.

MORLEY, JOHN, F.R.C.S. Eng., has been appointed Surgical Registrar to the Manchester Royal Infirmary.

PHILLIPS, MILES H., M.B. Lond., F.R.C.S. Eng., has been appointed Lecturer in Gynæcology in the University of Sheffield.

PYE-SMITH, Professor R. J., Ch.M. Sheffield, F.R.C.S. Eng., has been appointed to represent the University of Sheffield on the General Medical Council.

SCOTT, ALEX. R. P., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Senior House Physician at the Prince of Wales's General Hospital.

SHATTOCK, C. E., M.B., B.S. Lond., has been appointed House Physician at University College Hospital.

STEPHEN, DAVID, M.B., B.S. Aberd., has been appointed Assistant Medical Officer at the Lincoln Mental Hospital.

VAUGHAN, R. G., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Caldicot District of the county of Monmouth.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

AYR DISTRICT ASYLUM.—Junior Assistant Medical Officer. Salary £140 per annum, with board, lodging, and laundry.

BANGOR, CARNARVONSHIRE AND ANGLESEY INFIRMARY.—House Surgeon. Salary £100 per annum, with board, washing, and lodging.

BARNSLEY, BECKETT HOSPITAL.—Second House Surgeon, unmarried. Salary £80 per annum, all found.

BATH ROYAL UNITED HOSPITAL.—House Surgeon. Salary £80 per annum, with board, residence, and washing.

BELGRAVE HOSPITAL FOR CHILDREN, Clapham-road, S.W.—Resident Medical Officer for six months. Salary at rate of £60 per annum, with board, residence, &c.

BIRMINGHAM CITY ASYLUM, Winson Green.—Junior Assistant Medical Officer. Salary £150 per annum, with board, laundry, &c.

BIRMINGHAM, CITY EDUCATION COMMITTEE.—Medical Officer for Inspection of School Children. Salary £260 per annum.

BURY INFIRMARY.—Junior House Surgeon. Salary £80 per annum, with board, residence, and laundry.

CAMBRIDGE COUNTY ASYLUM.—Second Assistant Medical Officer, unmarried. Salary £160 per annum, with board, lodging, and attendance.

CROYDON UNION.—Assistant Medical Superintendent of the Infirmary and Assistant Medical Officer of the Workhouse and Children's Homes. Salary £140 per annum, with usual residential allowances.

DEVONPORT, ROYAL ALBERT HOSPITAL.—Assistant House Surgeon, unmarried, for six months. Salary at rate of £75 per annum, with board, apartments, laundry, &c.

DONCASTER, ROYAL INFIRMARY AND DISPENSARY.—Senior House Surgeon and Assistant House Surgeon, unmarried. Salaries £90 and £60 per annum respectively, with board, apartments, and washing.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—Second Casualty Officer for six months. Salary at rate of £40 per annum, with luncheon and tea. Also Assistant Surgeon.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, London, S.E.—House Physician for six months. Salary at rate of £60 per annum, with board, residence, and washing.

GLASGOW, UNIVERSITY OF.—Examinerships.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, N.—House Surgeon for six months. Salary at rate of £40 per annum, with board, lodging, and laundry.

HITHER GREEN, S.E., PARK HOSPITAL FOR CHILDREN.—Assistant Medical Officer. Salary £150 per annum, with board, lodging, and washing.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—House Physician for six months. Salary 30 guineas.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—Physician to Out-patients. Also Surgeon to Out-patients. Also Medical Registrar. Salary £127 10s. per annum. Also House Surgeon for six months. Salary £30, with board, residence, and washing.

HULL ROYAL INFIRMARY.—Assistant House Surgeon. Salary at rate of £60 per annum, with board and lodging.

ILFORD URBAN DISTRICT COUNCIL.—Assistant Medical Officer of Health. Salary £250 per annum.

ITALIAN HOSPITAL, Queen-square, W.C.—House Surgeon for six months. Salary £60 per annum, with board and residence.

LEICESTER INFIRMARY.—Honorary Surgeon.

LINCOLN CITY FEVER HOSPITAL.—Assistant Medical Officer of Health and Resident Medical Officer, unmarried. Salary £150 per annum, with rooms, coals, light, and attendance.

LISCARD, CHESHIRE, WALLASEY DISPENSARY AND VICTORIA CENTRAL HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with apartments, board, and service.

LONDON FEVER HOSPITAL, Liverpool-road, Islington, N.—Resident Medical Officer. Salary £250 per annum, with board and residence.

LONDON TEMPERANCE HOSPITAL.—Assistant Resident Medical Officer for six months. Salary at rate of 50 guineas per annum, with board, residence, and washing.

MAIDSTONE, WEST KENT GENERAL HOSPITAL.—House Surgeon and Assistant House Surgeon, both unmarried. Salary £100 and £80 per annum respectively, with board, lodging, and laundry.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST.—Honorary Assistant Physician.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead and Northwood.—Honorary Dental Surgeon. Also Honorary Radiographer.

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—House Surgeon. Salary £60 per annum, with board, residence, and laundry.

NORWICH, JENNY LIND INFIRMARY FOR CHILDREN, Unthank-road.—Resident Medical Officer (female). Salary £50 per annum, with board, apartments, and laundry.

PADDINGTON GREEN CHILDREN'S HOSPITAL, London, W.—Pathologist. Salary £100 per annum.

PORTSMOUTH WORKHOUSE INFIRMARY, WORKHOUSE, AND CHILDREN'S HOME.—Second Assistant Resident Medical Officer. Salary £120 per annum, with apartments, rations, &c.

RADIUM INSTITUTE, 16, Riding House-street, Portland-place, W.—Assistant Medical Superintendent. Salary £250 per annum.

READING, ROYAL BERKSHIRE HOSPITAL.—Second House Surgeon for six months. Salary £60 per annum, with board, lodging, and washing.

ROYAL EAR HOSPITAL, Soho.—Honorary Assistant Anæsthetist.

ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Dental Surgeon.

ROYAL NAVAL MEDICAL SERVICE.—Fifteen Commissions.

RICHMOND, SURREY, ROYAL HOSPITAL.—Assistant House Surgeon. Salary £70 per annum, with board and apartments.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Assistant Resident Medical Officer, unmarried, for six months. Salary at rate of £80 per annum, with board, residence, and laundry.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Junior House Surgeon for six months. Salary £80 per annum, with board, residence, and laundry.

TUNBRIDGE WELLS GENERAL HOSPITAL.—House Physician, unmarried. Salary £100 per annum, with board, residence, &c.

UNIVERSITY OF LONDON.—Examiners.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—Senior Resident Medical Officer. Salary £120 per annum, with board, residence, and washing.

WALSALL AND DISTRICT HOSPITAL.—House Physician and Casualty Officer. Salary £80 per annum, with board, residence, and laundry.

WEST AFRICAN MEDICAL STAFF.—Appointments. Salary £400 per annum.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, &c., 73, Welbeck-street, W.—Clinical Pathologist for six months. Salary £50 per annum.

WHITTINGHAM, NEAR PRESTON, COUNTY ASYLUM.—Pathologist and Assistant Medical Officer. Salary £200 per annum, with board, apartments, and washing.

WINCHESTER, ROYAL HAMPSHIRE COUNTY HOSPITAL.—House Physician. Salary £30 per annum.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House Surgeon for six months. Salary £80 per annum, with board, rooms, and laundry.

WREXHAM INFIRMARY.—Resident Medical Officer. Salary £100 per annum, with board, lodging, and washing.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Tottenham, in the county of Middlesex; and at Dumfries, in the county of Dumfries.

Births, Marriages, and Deaths.

BIRTHS.

BATES.—On Oct. 29th, at Vicars-hill, Lewisham, S.E., the wife of George Llewellyn Bates, L.R.C.P., M.R.C.S., L.D.S., Harley-street, W., of a son.

WEBB.—On Oct. 28th, 1911, at 119, Elgin-crescent, Notting Hill, W., the wife of W. S. Webb, M.D., L.R.C.P., &c. (late West African Medical Staff), of a daughter.

DEATHS.

PULLIN.—On Oct. 26th, at Abernethy House, Sidmouth, Thos. H. S. Pullin, M.D., F.R.C.S. Edin., aged 87 years.

STANLEY SMITH.—On Oct. 25th, at 68, Wimpole-street, Cavendish-square, peacefully after a short illness, E. Stanley Smith, M.D., M.R.C.P., aged 59 years. Funeral at Kensal Green at 3.30 on Saturday, Oct. 28th. Friends please accept this, the only intimation.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

A MEDICAL OFFICER'S SALARY.

BOARDS of guardians, as is only too well known to the medical profession, do not always err on the side of generosity and sympathy towards their medical officers. An account in the *Bradford Observer* of a recent meeting of the Bradford board of guardians reveals a condition of over-work and under-pay in the terms of employment of the medical officer of No. 1 district under that board which calls for public attention, particularly at a time when the amount and method of remuneration for medical service has become a public question. We learn that the deputy chairman of the Bradford board of guardians proposed that, subject to the consent of the Local Government Board, the salary of this medical officer should be increased from £50 to £100 per annum, exclusive of medicines and dispensing, which should in future be provided by the guardians. In answer to a critic the deputy-chairman justified his proposal by the statement that "the doctor had spent all the money allowed him in medicines; he had had nothing for himself. During the past year he had made no fewer than 3500 visits, which ran out at 3½*d.* per visit, so that really the doctor did not get paid for the medicine he gave, and the guardians thought it was time for every man to receive his hire." It is satisfactory to note that the motion was carried without further ado.

CHOLERA AND PLAGUE IN RUSSIA.

Mr. A. W. Woodhouse, British Consul at St. Petersburg, in his report for the past year just received at the Foreign Office, writes: "During 1910 conditions of public health in Russia were severely tried by a recurrence of plague and intensification of the cholera epidemic which had prevailed for three years previously on a much smaller scale. This increase of cholera is shown in the following comparison of figures for the past four years:—

Year.	Provinces and territories affected.	Cases.	Deaths.
1907	50	12,717	6,442
1908	69	30,709	15,543
1909	49	22,632	10,605
1910	72	216,091	101,002

The epidemic raged throughout the year without interruption from the time of its reappearance in the spring in Southern Russia. The chief nurseries of the disease appeared to be at two or three points in the province of Ekaterinoslav, especially in the district of Bakhmut, which is the seat of mining industries and several great iron works, employing many thousands of workmen. From here it spread over the country through Rostov-on-the-Don and Baku, the latter district having been the centre whence the Caucasus and trans-Caucasus received the contagion. The attention of the Russian authorities in combating the epidemic was chiefly directed to sanitary precautions and medical assistance along the courses of the principal water-ways. Every boat carrying passengers was placed under the observation of a medical officer on board, and 71 medical stations were established along the Don, Volga, Dvina, Neva, the Ladoga Canal system, and the rivers of Siberia.

"The first outbreak of bubonic plague in 1910 occurred at Odessa in the middle of May, and from that time until the end of November there were 140 cases, 42 of which ended fatally. The general medical opinion was that the contagion had been brought to the town by the sea. One more solitary case was disclosed there in December, and two or three deaths from plague occurred also at Batoum and Baku. A region more seriously affected by it was the Kirghiz Steppe in the province of Astrakhan, where 180 deaths took place out of 226 cases. A special medical commission of inquiry was sent into this district in the autumn. The character of the disease seems to change from bubonic in summer to pulmonary plague in the cold season. The greatest danger was from the Russian railway zone of the Chinese Eastern line through Manchuria, where 1043 Chinese and 32 Europeans contracted the disease, and 1020 Chinese and 29 Europeans died of it, between Oct. 26th, 1910, and Jan. 27th, 1911."

THE GALE AND SANITATION.

A CORRESPONDENT writes: "From the public health standpoint the value of the gale on the south coast last week is apt to be overlooked. Watching the great waves dashing on the beach the mind is carried away, firstly, by the magnificent spectacle afforded by the rough sea; and secondly, by the sight of the damage done to the foreshore. Considering the fierceness of the gale the damage done was comparatively slight, while the benefit derived must be an important consideration to health resorts. The gale drove the sea at high tide over the entire beach, not stopping at what is known as high-water mark and in many cases trespassed even much further. The result was that the accumulation of stones was thoroughly cleansed by sea water. It must be borne in mind, too, that such a cleansing process had not taken place since the previous gale in December. However careful local authorities are over their beach at the seaside they cannot cleanse it in the way it is periodically purified by a rough sea. More than ever was this cleansing process needed on this occasion after the long period of drought and great heat."

A DANGER TO HEALTH IN PUBLIC ELEMENTARY SCHOOLS.

To the Editor of THE LANCET.

SIR,—When our legislators framed their education laws they seem to have forgotten to arrange for fine weather to be provided for the carrying out of their grand educational scheme. The result of their forgetfulness has been the illness and death of many children who have reached school after exposure to heavy rain drenched with wet, and in this state they have gone through three hours' schooling. It has been stated by a judge that "attendance is not legal if a child is not in a fit state to attend." It is evident that if a child is dangerously wet he is not in a fit state, because he may contract a severe illness. Therefore, in the absence of the school doctor it should be the duty of the teacher to dry the clothes, or, if that is impossible, the child should be sent home. Very few, if any, of the medical inspectors have called attention to this matter.

The coöperation of the parents should be obtained in order to protect the children from this risk, but parents have been reduced to indifference to the welfare of their children by the action of some of the school attendance officers. Some of these officials regard themselves as competent to decide whether the explanations of the parents for the absence of their children are valid or not. Their duty is only to ask the parents the cause of absence and then report to the authority. An effort should be made to encourage parents to use their discretion as to when it is right to keep a child at home. Health is the best of all gifts, and should not be damaged or hazarded for a smattering of learning. Wet clothes often prove the starting-point of incurable disease.

I am, Sir, yours faithfully,

Torquay, Oct. 30th, 1911. H. H. TIDSWELL.

AN "AMMOCHLORIQUE" INHALER.

FOR the production of ammonium chloride fumes, simulating smoke, this apparatus answers well. It is small and compact and simple in action. In form it is like an ordinary hooked tobacco-pipe, the glass bowl containing the "laboratory" in which ammonia and hydrochloric acid are brought together to form ammonium chloride. The reagents are contained in glass bulbs with easily fractured tube ends. A wetted sponge is placed at the bottom of the bowl and the contents of a fractured ammonia tube are allowed to drop upon it. Next a sealed pipette of hydrochloric acid is placed in an open glass tube fitted into the rubber stopper of the bowl. On breaking off the ends of the pipette the acid falls into a small bulb at the lower end of the tube provided with an exit hole. Air drawn through the pipe by means of suction at the stem mouthpiece is first charged with hydrochloric acid. It then encounters the sponge saturated with ammonia when ammonium chloride is formed which reaches the respiratory organs in the state of smoke. The apparatus was submitted to us by Messrs. C. J. Hewlett and Son, Limited, of 35–42, Charlotte-street, London, E.C.

THE WOES OF A PUBLIC VACCINATOR.

To the Editor of THE LANCET.

SIR,—The enclosed may be worthy of a corner in your paper under the above title:—

P.V.: "Well, Mrs. ——, do you wish me to vaccinate your baby this morning?"

Mrs. ——.: "No thank you, sir, my husband says he would rather pay and have it done properly."

I am, Sir, yours faithfully,

Oct. 28th, 1911. R. B. F.

"AURORA" HEALTH CARAVAN.

FOR the past three months the "Aurora" Health Caravan—belonging to the Women's Imperial Health Association of Great Britain, of which H.R.H. Princess Louise Duchess of Argyll is Patron—has been touring the West of England under the charge of Major C. A. Thimm, who may be remembered as being formerly connected with the Sleeping Sickness Bureau, Burlington House, and whose "Bibliography of Trypanosomiasis" is a standard work of reference on that subject. During the tour Major Thimm held open-air meetings in all the villages through which he passed, and gave simple and instructive "Health Talks," and when visiting cities and the large towns public halls were engaged and well-known medical men and others sent from London to lecture on behalf of the association, among whom have been Dr. David Walsh ("Infant Mortality," "Teeth in Connexion with the Health of the Nation—Medical Side"); Dr. Murray Leslie, the chairman of the association ("Prevention of Consumption"); Mr. George Thomson, L.D.S. ("Teeth in Connexion with the Health of the Nation—Dental Side"); Dr.

Lilian Simpson ("Home Nursing"); Dr. J. G. Garson ("Hygiene of Consumption"); and Mr. C. G. Moor, M.A., F.I.C. ("Foods for Grown-Ups, Children, and Babies"). Major Thimm received from the medical officers of health of the districts he travelled through the greatest assistance and encouragement.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced for November, 1911:—

September–November (Antwerp).—International Exhibition of Alimentation, Brewing, Wines, and Liqueurs.
Oct. 31st–Nov. 4th (London, Royal Horticultural Hall).—Twenty-second Universal Cookery and Food Exhibition.
Nov. 1st–14th (London).—"The Englishwoman" Exhibition of Arts and Handicrafts.
" 3rd–11th (London, Olympia).—Tenth International Motor Exhibition.
" 9th–11th (Cape Town).—Congress of the South African Branch of the Royal Sanitary Institute.
" 10th–25th (Manchester).—Smoke Abatement Exhibition.
" 14th and 15th (Vienna).—Jubilee of Union of Austrian Dental Surgeons.
" 21st–23rd (Montreal).—Canadian Public Health Association (First Annual Meeting).
November (Rome).—Fourth International Congress of Physical Education.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W. (temporary address during building of new house).

TUESDAY.

PATHOLOGICAL SECTION (Hon. Secretaries—J. C. G. Ledingham, A. E. Boycott): at 8.30 P.M.

LABORATORY MEETING, Lister Institute, Chelsea Gardens, S.W. (nearest station, Sloane-square).

Dr. Bayon: (1) Demonstration of Organisms from Cases of Leprosy; (2) Attempts to Differentiate various Acid-fast Organisms by Complement-fixation and Animal Tests.
Prof. E. A. Minchin: Demonstration of Intracellular Phase of *T. Lewisi* in the Stomach of the Flea.
Dr. Funk and Dr. Cooper: Demonstration on Pigeon Beri-beri.
Dr. Funk: The Cause and Cure of Beri-beri.
Dr. H. C. Ross and Dr. Cropper: Demonstration of Division-figures in Lymphocytes.
Dr. E. H. Ross: The Developmental Cycle of the Lymphocyto-zoon of the Guinea-pig (Kurloff's Body).
Dr. Henderson-Smith: The Immunisation of Rabbits with Varying Doses of Typhoid Vaccine.
Dr. Priestley: An Attempt to Differentiate the Diphtheroid Group of Organisms.
And other Papers and Demonstrations.

FRIDAY.

GENERAL MEETING OF FELLOWS at 4.45 P.M.

Election of Candidates for Fellowship.

CLINICAL SECTION (Hon. Secretaries: James Galloway, Charles H. Fagge): at 8.30 P.M.

Cases:
Dr. W. Essex Wynter and Mr. J. Murray: Toxic Cirrhosis, with Splenoportal Thrombosis and Ascites (Banti's Disease) treated by Femoral Drainage.
Dr. H. P. Hawkins: (?) Splenic Anæmia with Question of Excision of the Spleen.
Dr. N. S. Finzi: Malignant Growth of the Cheek which has Disappeared under Radium Treatment.
Dr. Reginald Miller: Hæmochromatosis with Diabetes.
Mr. W. Sampson Handley: Ivory Exostosis of the Frontal Sinus.
Dr. Norman Dalton: (1) Malignant Anæmia, Hæmolytic Type; (2) Malignant Anæmia, Aplastic Type.

Paper:
Prof. Rogers: The Treatment of Cholera by the Intravenous Infusion of Hypertonic Saline Solution.

(Members of the Epidemiological Section are specially invited to attend this meeting.)

HUNTERIAN SOCIETY, Metropolitan Hospital, Kingsland-road, N.E.

WEDNESDAY.—4 P.M., Clinical Afternoon.

UNITED SERVICES MEDICAL SOCIETY, Royal Army Medical College, Grosvenor-road, S.W.

WEDNESDAY.—5 P.M., Lieut.-Col. H. E. R. James, C.B., and Major C. E. Pollock, R.A.M.C.: Medical Arrangements in the Field, with Special Reference to the Functions of the Clearing Hospital.

NEW LONDON DERMATOLOGICAL SOCIETY, Western Skin Hospital, 179, Great Portland-street, W.

THURSDAY.—4.30 P.M., Dr. D. Walsh: The Influence of Cardiac Valvular Disease upon Cutaneous Disorders. Clinical Cases.

OPHTHALMOLOGICAL SOCIETY, 11, Chandos-street, Cavendish-square, W.

THURSDAY.—8 P.M., Card Specimen will be shown by Mr. F. Moore. 8.30 P.M., Prof. Straub (Amsterdam): The Pathology of Dust-like Opacities in the Vitreous Body and of Descemet-dots.—Mr. A. Ormond: Ocular Conditions found in Mongolian Idiots.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

TUESDAY AND FRIDAY.—5 P.M., Major H. C. French: Syphilis.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. Dr. Simson: Diseases of Women. 12 noon, Dr. Bernstein: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. P. Dunn: Diseases of the Conjunctiva.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 11.30 A.M., Mr. Etherington-Smith: Demonstration of Minor Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Saunders: Clinical, with cases.

WEDNESDAY.—10 A.M., Dr. Simson: Gynæcological Demonstration. Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Simson: Diseases of Women. 5 P.M., Lecture:—Dr. Beddard: Practical Medicine. (Lecture II.).

THURSDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12.15 P.M., Lecture:—Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Dr. Bernstein: Blood Examinations—Serology.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 12.15 P.M., Lecture:—Dr. Pritchard: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Mr. Pardoe: Clinical (Urinary Surgery).

SATURDAY.—10 A.M., Medical Registrar: Demonstration of Cases in Wards. Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. Bishop Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.30 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 2.15 P.M., Special Lecture:—Mr. W. Turner: Empyema.

TUESDAY.—2 P.M., Operations. 3.15 P.M., Dr. R. Wells: Medicine. 2.15 P.M., Mr. R. Carling: Surgery. 4.15 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 4.30 P.M., Special Lecture:—Dr. J. Taylor: Ocular and Visual Signs and Symptoms in Nervous Disease.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Sir J. Rose Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

SATURDAY.—10 A.M., Radiography. 11 A.M., Dr. A. Davies: Pathological Demonstration. 2 P.M., Operations. Out-patient Demonstration:—10 A.M., Surgical and Medical. 11 A.M., Eye.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. H. Gillespie), 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson).

TUESDAY.—Clinic:—10 A.M., Medical Out-patient (Dr. A. G. Auld). 2.30 P.M., Operations. Clinics:—Surgical (Mr. Howell Evans); Gynæcological (Dr. A. B. Giles). 3.30 P.M., Medical In-patient (Dr. A. J. Whiting). 4.30 P.M., Lecture:—Dr. W. H. Duncan: The Etiology, Pathology, and Bio-chemistry of Malignant Disease.

WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Dr. A. H. Pirie).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. B. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel).

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. H. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie). 4.30 P.M., Lecture: Mr. R. P. Brooks: The Conjunctiva in Health and Disease.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.

WEDNESDAY.—4 P.M., Lecture:—Dr. Maguire.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Clinical Lecture:—Dr. F. Batten: Muscular Atrophy.

FRIDAY.—3.30 P.M., Clinical Lecture:—Mr. P. Sargent: Trigeminal Neuralgia.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.

TUESDAY AND FRIDAY.—3.45 P.M., Lecture:—Dr. D. McKenzie: Ear.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, 49, Leicester-square, W.C.

TUESDAY.—6 P.M., Dr. W. K. Sibley: Treatment of Skin Diseases by Hyperæmia.

THURSDAY.—6 P.M., Chesterfield Lecture:—Dr. M. Dockrell: Syphilis (continued): Papular (I., Miliary; II., Lenticular; III., Squamous; IV., Moist), Pustular (I., Small; II., Large), Nodular and Gummatous.

ROYAL INSTITUTION OF GREAT BRITAIN, Albemarle-street, Piccadilly, W.

MONDAY.—5 P.M., General Meeting.

ANCOATS HOSPITAL, Manchester.

THURSDAY.—4.15 P.M., Dr. W. J. S. Bythell: X Ray Diagnosis of Stone in the Kidney. (Post-Graduate Clinic.)

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (6th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (7th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London, (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.) Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (8th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's 2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (9th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (10th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (11th).—Royal Free (9A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.), Hospital operations are performed daily.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free from THE LANCET Offices, have been reduced, and are now as follows:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 1 0	One Year	£1 5 0
Six Months	0 12 6	Six Months	0 14 0
Three Months	0 6 6	Three Months	0 7 0

(The rate for the United Kingdom will apply also to Medical Subordinates in India whose rates of pay, including allowances, is less than Rs.50 per month.)

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London County and Westminster Bank, Covent Garden Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

TO COLONIAL AND FOREIGN SUBSCRIBERS.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied.

SOLE AGENTS FOR AMERICA—Messrs. WILLIAM WOOD AND CO., 51, Fifth Avenue, New York, U.S.A.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Nov. 1st, 1911.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Oct. 26	29·28	S.W.	...	62	55	42	45	47	Fine
,, 27	29·10	S.E.	0·11	57	52	45	45	47	Foggy
,, 28	29·65	N.	...	84	50	41	40	42	Cloudy
,, 29	30·26	W.	...	87	57	36	34	39	Fine
,, 30	29·92	S.W.	0·21	67	59	39	54	57	Cloudy
,, 31	30·07	S.W.	0·15	96	55	41	42	43	Fine
Nov. 1	30·16	S.W.	...	77	52	43	42	43	Fine

The following journals, magazines, &c., have been received:—Annales de Gynécologie et d'Obstétrique, Journal of Clinical Research, Australian Medical Journal, Therapeutic Gazette, Australian Medical Gazette, Hospital Assistant, Indian Medical Gazette, Annales de l'Institut Pasteur, Archives de Médecine et Pharmacie Navales, Revue de Chirurgie, Revue de Médecine, Ophthalmology, Malaria e Malattie dei Paesi Caldi, Journal of the Royal Sanitary Institute, Cleveland Medical Journal, Burlington Magazine, Cornhill, L'Hygiène.

Communications, Letters, &c., have been received from—

A.—Mr. S. J. Arkwright, Wickham Market; Animals' Friend Society, Lond.; Messrs. Claudius Ash, Sons, and Co., Lond.; *The Architect*, Lond., Editor of; Ardath Tobacco Co., Lond.; Messrs. Allen and Hanburys, Lond.; Ayr District Asylum, Medical Superintendent of; Alexandra Therapeutic Institute, Lond., Secretary of; Mr. R. J. Albery, Lond.; Mr. M. Arnette, Lond.; Admiralty, Medical Department, Lond., Director-General of.

B.—Bristol Royal Infirmary, Secretary of; Mr. Albert Benthall, Lond.; Mr. A. A. Bradburne, Manchester; Dr. Charles A. Beck, Barton-on-Humber; Dr. John Brown, Bacup; Dr. R. C. Buist, Dundee; Colonel Sir D. Bruce, A.M.S., Lond.; Mr. C. Birchall, Liverpool; Messrs. Bruce, Green, and Co., Lond.; Benger's Food, Manchester; Bury Infirmary, Hon. Secretary of; Birmingham Education Committee, Secretary of; Messrs. Burroughs, Wellcome, and Co., Lond.; Board of Education, Secretary of.

C.—Mr. H. A. Collins, Lond.; Croydon Mental Hospital, Medical Superintendent of; Chicago School of Sanitary Instruction, Chicago; Christian Science Committees on Publication, Lond., District Manager of; Messrs. Chatto and Windus, Lond.; Dr. J. B. Christopherson, Lond.; Messrs. J. and A. Churchill, Lond.; Messrs. Cordes, Hermanni, and Co., Hamburg; Messrs. T. Christy and Co., Lond.; Mr. R. S. Collier, Ripon; Mr. J. W. A. Cooper, Cockermouth; Mr. Herbert Cardin, Stock; Central Translations Institute, Lond.; Dr. J. P. Candler, Lond.

D.—Denver Chemical Manufacturing Co., Lond.; Sir Dyce Duckworth, Bart., Lond.; Dr. Eugene Dupuy, Paris; Messrs. Dawson and Sons, Lond.; Mr. A. H. Diplock, Lond.; Mr. W. B. Deeks, Ancon.

E.—Egypt Survey Department, Director-General of, Ghiza.

F.—Dr. Fieldhall, Lond.; Far Eastern Association of Tropical Medicine, Hong-Kong, Secretary of; Dr. R. Fortescue Fox, Lond.; Fabian Society, Lond.; Dr. B. Rowland Fothergill, Brighton; Fine Art Society, Lond.; Messrs. J. S. Fry and Sons, Bristol; *Financial Review of Reviews*, Lond. Manager of; F. F. M.; Sir John Fagan, Monasterevan; Dr. A. C. D. Firth, Lond.

G.—Mr. W. A. Griggs, Brighton; Guest Hospital, Dudley, Secretary of; Mr. Gaston Gosselin, Pontorson; General Infirmary, Chester, Secretary of; Gladiator Co., Lond., Secretary of; Dr. G. A. Gibson, Edinburgh; Dr. Harry Gray, Bristol; Messrs. John Goodman and Sons, Birmingham.

H.—Mr. C. E. Hastings, Lond.; Harveian Society of London, Hon. Secretary of; Mr. W. H. Heygate, Colwyn Bay; Messrs. C. J. Hewlett and Son, Lond.; Mr. T. H. Hewitt, Lond.; Mr. H. Hedberg, Lond.; Dr. B. Hall, West Mersea; Mrs. George Hubbard, Eltham.

I.—Ignotus; Ilford, Ltd., Lond.; Ilford Urban District Council, Clerk to the.

J.—Dr. Alfred C. Jordan, Lond.; Jeyes' Sanitary Compounds Co., Lond., Secretary of; Messrs. Jewsbury and Brown, Manchester; Dr. J. Johnston, Bolton.

K.—Messrs. R. A. Knight and Co., Lond.; Messrs. Kutnow and Co., Lond.; Messrs. P. Kahn and Co., Lond.; Mr. W. P. Kebble, Lond.; Mr. A. E. Kidd, Dundee; Mr. E. Knight, Lond.; Mr. P. E. Kingsford, Ellesmere Port.

L.—Dr. W. L. Liston, Tewkesbury; Messrs. F. Lawden and Sons, Bournemouth; Dr. A. Le Dentu, Paris; Major J. C. Holdich Leicester, I.M.S., Lond.; Dr. Just Lucas-Championnière, Paris; Dr. R. Bruce Low, Lond.; The Lawn, Lincoln, Medical Superintendent of; Dr. H. A. Lediard, Carlisle; Mr. H. K. Lewis, Lond.; Mr. F. W. Lowndes, Liverpool; Rev. Henry Lansdell, D.D., Lond.; Mr. Priestley Leech, Halifax; Mr. C. Lillingston, Gorleston; Dr. E. B. Leech, Manchester; Dr. H. B. Luard, Osmotherley; Messrs. J. and J. Lonsdale and Co., Lond.; Mr. G. M. K. Leggett, Liverpool.

M.—Dr. Donald J. Monro, Lond.; Dr. W. Cuthbert Morton, Leeds; Medical Sickness and Accident Society, Lond., Secretary of; Medico-Chirurgical Society of Glasgow, Editorial-Secretary of; Medico-Psychological Association, Northern and Midland Division, Kirkburton, Secretary of; Mount Vernon Hospital for Consumption, Lond., Secretary of; Dr. J. P. McGowan, Edinburgh; Dr. S. McIlwaine, Peterhurst-Clevedon; Mr. R. H. Marquis, Lond.; Mr. R. Mosse, Berlin; Messrs. Marvis and Co., Lond.; Captain R. McCarrison, I.M.S., Gilgit; Messrs. Martin, Winser, and Co., Tunbridge Wells; Lieutenant-Colonel R. L. R. Macleod, R.A.M.C., Aden; Dr. J. A. Macdougall, Glasgow; Professor B. Moore, Liverpool; *Morning Leader*, Lond., News Editor of.

N.—National Dental Hospital, Lond., Staff of; Dr. Thomas R. Neilson, Philadelphia; N. F. E.; Dr. H. A. Alford Nicholls, Roseau, Dominica; North of England Obstetrical and Gynæcological Society, Manchester, Secretary of.

O.—Messrs. Osborne Peacock Co., Manchester; Ophthalmological Society, Lond., Hon. Secretaries of.

P.—Messrs. Peacock and Hadley, Lond.; Pool's Advertising Agency, Lond.; Mr. F.C. Pybus, Newcastle-on-Tyne; Pneumosan Chemische Fabrik, Lond., Secretary of; Dr. F. J. Poynton, Lond.; Poor-Law Medical Officers' Association, Lond., Hon. Secretary of.

R.—Royal London Ophthalmic Hospital, Lond., Secretary of; Royal Dental Hospital of London, Members of the Staff of; Royal Mail Steam Packet Co., Lond.; Mr. J. F. Richards, Seven Kings; Mr. H. A. Reed, Darlington; Mr. E. Rotger, Lond.; Royal College of Surgeons of England, Lond., Secretary of; R. S.; Royal Berkshire Hospital, Reading, Secretary of; Royal Ear Hospital, Lond., Secretary of; Radium Institute, Lond., Medical Superintendent of; Roborat Co., Lond., Secretary of; Royal Institute of Public Health, Lond., Hon. Secretary of; Royal Sanitary Institute, Lond., Secretary of; Royal Institution, Lond., Secretary of; R. B. F.; Dr. R. E. Rentoul, Liverpool.

S.—St. Mary's Hospital for Women and Children, Lond., Secretary of; Scarborough Hospital and Dispensary, Secretary of; *South Wales Argus*, Newport, Monmouthshire; Dr. August Schachner, Louisville, Kentucky; Southampton, County of, Winchester, County Medical Officer of; Dr. Donald Stewart, Aylesbury; Dr. D. Steel, Townsville, Australia; Sirdar Rubber Co., Lond.; Messrs. Spiers and Pond, Lond.; Messrs. Sherratt and Hughes, Manchester; *Sphere and Tatler*, Lond., Director of; Smith's Advertising Agency, Lond.; Mr. F. L. Simons, Edinburgh; Salford Royal Hospital, Secretary of; Messrs. G. Street and Co., Lond.; Lieutenant-Colonel R. R. Sleman, Lond.; Dr. J. S. Kellett Smith, Lond.; Dr. F. W. Saunders, Cernobbio.

T.—Mr. H. Tilley, Lond.; Mr. T. Thomson, Lond.; Dr. E. Tatlow, Wolverhampton; Mr. C. F. Thackray, Leeds; Tunbridge Wells General Hospital, Secretary of; Mr. H. H. Tidswell, Torquay.

U.—United Provinces Government Press, Allahabad, Superintendent of; United States Department of Agriculture, Bureau of Chemistry, Chief of, Washington.

W.—Mr. J. E. Williams, Cymmer; Dr. V. Wanostrocht, Beddgelert; Messrs. J. White and Co., Warrington; West Kent General Hospital, Maidstone, Secretary of; Dr. Henry Whitehead, Manchester; Mr. T. A. Welton, Lond.; Mr. John Wallace, Bombay; Dr. George E. Waugh, Lond.; Mr. Vere G. Webb, Lond.; Dr. W. B. Warrington, Liverpool; W. G. B. E.; Messrs. E. L. Warren and Co., Niles, U.S.A.; Messrs. W. Watson and Sons, Lond.; Messrs. Watkins and Osmond, Lond.; Wrexham Infirmary, Secretary of; Messrs. J. Wright and Sons, Bristol; Messrs. Widenmann, Broicher, and Co., Lond.; Mr. A. P. Watson, Lond.; Professor G. Sims Woodhead, Cambridge; Women's National Health Association of Ireland, Dublin, Hon. Secretary of; Mr. A. M. Webber, Nottingham; Westminster, Medical Officer of Health of.

Letters, each with enclosure, are also acknowledged from—

A.—Dr. D. A. Alexander, Bristol; A. V. W.; Mr. E. Arnold, Lond.; Mr. J. W. Arrowsmith, Bristol; Messrs. Armour and Co., Lond.; A. B. S.

B.—Dr. W. F. Blyth, Battleford; Mr. A. Biersteker, The Hague; British and Foreign Blind Association, Lond., Secretary of; Birmingham City Asylum, Clerk to the; Mr. F. J. Bennett, Lond.; Messrs. Brady and Martin, Newcastle-on-Tyne; Dr. E. G. Bulleid, Lond.; Mr. E. Blatchley, Lond.

C.—Messrs. J. and A. Carter, Lond.; Messrs. Carnrick and Co., Lond.; C. H. W.; Chester Corporation, Accountant to the; C. S. R.; Cumberland Infirmary, Carlisle, Secretary of; County Asylum, Whittingham, Clerk to the; Croydon Corporation, Accountant to the; C. L.; Cheltenham General Hospital, Secretary of; Messrs. A. H. Cox and Co., Brighton.

D.—Messrs. Dalross, Edinburgh; Down District Lunatic Asylum, Downpatrick, Clerk to the; D. A. B.; Mr. D. C. Doull, Sydney, New South Wales; Messrs. Duncan, Flockhart, and Co., Edinburgh; Derby Borough Asylum, Clerk to the; D. W. S.

E.—East Suffolk County Council, Ipswich, Secretary of; Electric Supply Publicity Committee, Lond., Secretary of.

F.—Fellows Co., New York; Mr. G. FitzGerald, Queenstown; F. W. T.; F. L. W.

G.—Messrs. Gale and Co., Lond.; Galen Manufacturing Co., Lond.; Dr. A. E. Garrod, Lond.; Dr. T. Guthrie, Liverpool; General Life Assurance Co., Lond.; Gloucestershire Royal Infirmary, Gloucester, Secretary of; Messrs. W. Goldsmith and Co., Lond.; Mr. M. Gunning, St. Ives; General Medical Council, Lond., Acting Registrar of; Messrs. Grindlay and Co., Lond.; Dr. T. B. Grimsdale, Liverpool.

H.—Messrs. Hogg and Son, Lond.; Mr. E. S. Hemsted, Kintbury; Mr. N. Hannah, Ashton-in-Makerfield; Messrs. T. Hinshelwood and Co., Glasgow; Mr. P. Lake Hope, Pont-Yates; Hampden House, Lond., Secretary of; Dr. T. Holt, Burnley.

J.—Mr. H. A. Jeffery, Bradford; J. G. C.; J. A. B.

K.—Mr. A. R. Kay, Cley; K. H. C.

L.—Mr. R. L. Legate, Christchurch; Leicester Infirmary, Secretary of; Leicester Education Committee, Secretary of; Liverpool Eye and Ear Infirmary, Secretary of; Mr. H. E. Lambert, Birmingham; Messrs. Lake and Co., Eastbourne; Leicester Borough Asylum, Clerk to the; Lincoln Corporation, Medical Officer of Health of; Liverpool Guardians, Clerk to the; "Locum," West Kensington.

M.—Mr. C. Mansell Moullin, Lond.; Messrs. C. and E. Morton, Lond.; Malvern Hydropathic Establishment, Manager of; Messrs. F. G. Moore and Co., Lond.; Maltine Manufacturing Co., Lond.; Mr. C. Martin, Birmingham; Messrs. Meister, Lucius, and Brüning, Lond.; Manchester Hospital for Consumption, Secretary of; Manchester North Borneo Rubber Co., Manchester, Secretary of; Dr. L. S. Machado, Tuticorm; Mr. H. E. Merrell, Amersham; Dr. I. B. Muirhead, Lond.; Manchester Victoria Jewish Hospital, Secretary of.

N.—Norwood Sanatorium, Beckenham, Medical Officer of Health of; National Provident Institution, Lond., Secretary of; Nottingham General Dispensary, Secretary of.

O.—Ozonair, Ltd., Lond.

P.—Portsmouth Guardians, Clerk to the; Messrs. Preston Bros. and Co., Huddersfield; Dr. J. R. Parry, Hamilton, Canada.

R.—Dr. O. Rozenraad, Lond.; Royal Albert Hospital, Devonport, Secretary of; Royal Albert Institution, Lancaster, Accountant to the; Royal National Orthopædic Hospital, Lond., Secretary of; Richmond (Surrey) Royal Hospital, Secretary of; Mr. E. S. Richardson, Manchester.

S.—Mr. A. E. Stansfeld, Lond.; Springfield House Asylum, Bedford, Medical Superintendent of; Sanitas Electrical Co., Lond.; Dr. G. C. E. Simpson, Liverpool; Dr. P. Stewart, Lond.; Messrs. R. Sumner and Co., Liverpool; Mr. W. Smithers, Chapel End; St. Andrew's Hospital, Northampton, Clerk to the; St. John Ambulance Association, Lond., Secretary of; S. A. B.; Mr. C. F. Scripps, Lond.

T.—T. A. C.; T. T.

V.—Messrs. J. W. Vickers and Co., Lond.; Messrs. Van Houten, Lond.; Dr. A. Valenzuela, Tocna.

W.—Mr. C. J. Walker, Lond.; Messrs. A. J. Wilson and Co., Lond.; Mr. C. Worth, Lond.; Westminster General Dispensary, Lond., Secretary of; Dr. A. A. Warden, Paris; Mr. A. Wander, Lond.; Warneford Hospital, Oxford, Medical Superintendent of; Messrs. F. Williams and Co., Lond.; Mr. R. S. Walker, Lond.; Dr. J. F. Wilkinson, Lond.; Messrs. Welton, Jones, and Co., Lond.; Mrs. A. M. Webb, Lond.; Warneford, Leamington, and South Warwickshire Hospital, Secretary of; W. H. H.; Dr. A. J. Wallace, Liverpool.